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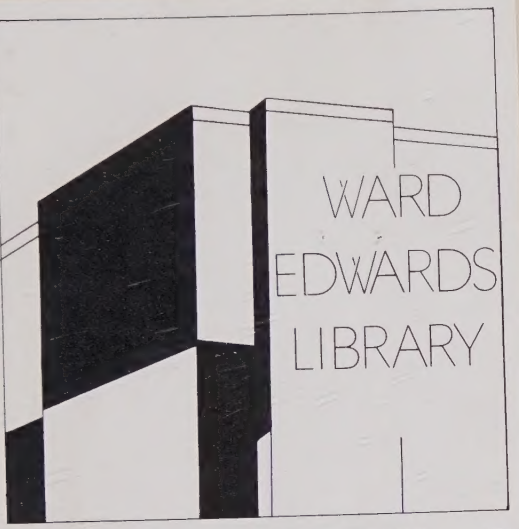

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STATE AID FOR EDUCATIONAL PROJECTS IN THE PUBLIC SCHOOLS

A Study of the Practice in 48 States of Subsidizing Educational Projects Concerned With the Public Schools

By
LESTER NELSON NEULEN, Ph.D.

Teachers College, Columbia University
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STATE AID FOR EDUCATIONAL PROJECTS IN THE PUBLIC SCHOOLS

PART I

INTRODUCTION

SIGNIFICANCE OF THE SUBJECT

That state aid for the improvement of educational conditions is a necessary function of the state is in conformity with the current trend of legal opinion and the best judgment of many educators. With the ever-increasing interest in constructive legislation for improving state policies in public school finance there is a corresponding demand on the part of educational committees of state legislators, educators, legislators, and interested citizens for concise and usable objective evidence of current and general practice in subsidizing educational projects, together with objective results of such practice. Particularly is this true in the light of present argumentation based on the proposition that there are two fundamental principles or purposes governing the distribution of state aid for the encouragement of education; one is the equalization of educational opportunity, and the other is the stimulation of local educational sentiment. This point, perhaps, may best be illustrated from such typical statements as:

> Any formula which attempts to accomplish the double purpose of equalizing resources and rewarding effort must contain elements which are mutually inconsistent.[1]

> The system of state aid which does not take cognizance of local contacts and which does not stimulate local interest, does not promote the highest efficiency either in the local or central offices or in the system as a whole.[2]

> The rewarding of effort as a method of encouraging progress will be less and less used by states.[3]

[1] Strayer and Haig. *Financing of Education in the State of New York,* Vol. I, p. 175, 1923.

[2] Updegraff. Harlan. "Financial Support." *Rural School Survey of New York State,* p. 115, 1922.

[3] Mort, Paul R. *State Support for Public Schools,* p. 39, 1926.

The state should distribute whatever aid it has, be the amount large or small, in such a manner as to encourage extra efforts on the part of the local community and to place a premium on the efforts which communities make to help themselves.[4]

That additional factors also bear on the importance of the subject is apparent from a consideration not only of the financial cost involved in subsidizing projects, and the large number of children concerned, but also from a consideration of the need of a survey of the subject as a means of opening up the field for further intensive study and research along desired lines.

PURPOSE OF THE STUDY

The limitations of the present study should be clearly recognized. It is not the province of this study to evaluate the effect of the various prevailing systems of state aid or to attempt to establish the best method of allocating state aid for educational projects. Neither is it the province of the present study to determine the best provision for the respective projects. This could not be compassed in any one research, but would require several intensive investigations. It is, however, the province of this study:

First, to assemble all available data, bearing specifically on certain projects in the respective states, which will be pertinent to scientific inquiry as to the possibilities for establishing extensions of their educational systems.

Second, to discover

a. What constitutes general practice in state aid,

b. What constitutes special practice in state aid as it directly affects the classroom product,

c. Whether the tendency in state aid during the ten-year period (1913-1923) has been toward an increase in the policy of subsidizing projects,

d. Whether subventions are continuous or temporary,

e. To what extent projects are found in a majority of states and in each state,

f. To what extent projects selected by states are common, and

g. What correlation exists between activity manifested by a state in subsidizing projects, and its educational rank.

[4] Cubberly, Ellwood P. *School Funds and Their Apportionment,* Chap. I, 1905.

Third, to determine from all available data how special subsidy for one or more projects has functioned as a device for use by states in accomplishing educational progress.

Fourth, to open up the field constructively to students of the subject in such a manner as to afford objective evidence of special and general practice in the forty-eight states of the United States together with objective results of such practice.

SUBJECT DEFINED

The process of identifying projects and discriminating between what is aid within the meaning attached to the term as used in this treatment, and what is an element of the general practice in the distribution of state funds at large requires some explanation. Every project encountered was analyzed with a view that "educational projects" should include only those specific services, enterprises, or activities which are conducted, managed, and administered by public elementary and secondary schools under the supervision, direction, and subsidy of the state alone for the promotion of public education and the encouragement of educational progress. In the analysis of legislative appropriations this construction was rigidly adhered to. Thus it becomes evident that such a definition precludes consideration of private, denominational, and higher educational institutions, together with state departments, divisions, and bureaus thereof; state boards, societies, commissions, committees, associations, and foundations; and implies the restriction of aid only to those undertakings within the field of public elementary and secondary schools supported by public taxation. It also seemed feasible in conjunction with this consideration to exclude all projects involved in Federal Aid, as granted under the Smith-Hughes and Smith-Lever Acts, and to omit state aid on the bases of property valuation, attendance, school population, number of teachers, and salaries.

With such an interpretation as that advanced above, it may be of interest to note that the following classes of enterprises were excluded:

1. State, private, and denominational universities.
2. State, private, and denominational colleges, such as agricultural, industrial, technical, mechanical, teachers, and vocational colleges.

3. State, private, and denominational training and trade schools, such as normal, practice, industrial, nurses, nautical, textile, technical, and vocational schools.

4. State, private, and denominational special schools, such as adult (illiterate), experimental, summer and Indian schools, and academies.

5. State, private, and denominational institutions (for special classes), such as for the deaf, feeble minded, incorrigible, blind, indigent, and juvenile offenders.

6. State, private, and denominational societies, associations, boards, and foundations.

7. State departments, bureaus and divisions thereof; commissions, and committees.

8. Ancillary Activities:

Teacher institutes	Curriculum experiments
Short courses	Scholarships
Investigations	Prizes and premiums
Club work	Salaries, pensions, and expenses
Research	Public and traveling libraries
County supervision	Training of teachers in service

SOURCE OF DATA

The approach to the problem has been largely documentary, comparative, and statistical. A meticulous study has been made of both primary and secondary sources, covering a continuous ten-year period from 1913 to 1923, with a view of ascertaining not only the projects for which special appropriation has been made, together with the basic facts pertinent thereto, but also as a method of checking upon the accuracy of the results thus obtained. The primary sources have included the statutes of the states, state codes, general and session laws, and state official reports. Among the state official reports, the writer has studied those of the state superintendents of public instruction together with those of the state boards of education and also the financial reports of state auditors. The secondary sources have included surveys, histories of various states, articles, monographs, and books.

EMPHASIS ON THE PRESENTATION OF FACTS

The aim throughout the study has been essentially one of assembling and presenting all available data bearing specifically on certain projects upon the basis of which a more intelligent judgment might be formed with respect to special aid as a device

for use by states in accomplishing educational progress. Every effort has been made to derive for comparative purposes within the limitations of these data as many pertinent units of measure as possible. Whenever an interpretation has been made, it has been little more than a statement or recapitulation of conclusions that can be found in the array of data themselves. In large part, therefore, the review is objective; and so the situation as set forth leads the writer to believe that in these data are found the conclusions which every interested person should observe.

CHAPTER I

EXISTING STATUS OF STATE AID FOR EDUCATIONAL PROJECTS IN THE PUBLIC SCHOOLS

THE PRINCIPLE OF AID

Early in our national history almost the entire burden of school support was placed upon local units, especially upon school districts.[1] It was not until virtually the beginning of the nineteenth century, however, that the states themselves began to participate in the support of schools; and then it was done with the idea of aiding local communities by apportioning to local districts the income from invested money obtained from the sale of public lands.[2] Men interested in education at that time seriously believed that eventually the income from the permanent school funds would suffice for practically the greater part, if not the whole, of the maintenance cost of the public schools.[3] Since the income from invested school funds has seldom been sufficient to meet even the state's share of the burden of school support,[4] such expectations obviously never materialized. It is interesting to note, however, that this idea—that it is the function of the state to aid local communities in the support of their schools until the state is able to take over the total burden—has persisted to the present time. A mere reference to our modern school laws and educational literature will reveal such expressions as "state aid," "high school aid," "aid for consolidation," "rural aid," and "aid for special subjects," etc., which substantiate the persistence of this idea and projects itself through the use of money from county sources to "county aid" and through the promotion of vocational education under the Smith-Hughes Law to "national aid." Further than that, this

[1] Reisner, Edward H. *Nationalism and Education Since 1789*, p. 348.
[2] Pittenger, B. F. *An Introduction to Public School Finance*, p. 270.
[3] Swift, Fletcher Harper. *Public Permanent School Funds in the United States*, p. 95.
[4] Pittenger, B. F., *op. cit.*, p. 271.

principle of aid has increased its scope of application not only to money derived from state taxes, but also to two additional purposes governing its distribution [5] into which the word has now been almost completely absorbed.

GENERAL PRACTICE

Dr. Fletcher Harper Swift [6] points out that ever since Connecticut nearly ruined her schools (1801-1840) by attempting to support them entirely from the proceeds of her permanent school funds, local support has steadily gained favor both in theory and in practice until it has become little less than a fetish. Despite this decline, however, in the importance of the state as the bearer of school financial burdens, it is significant to note from this study that the real tendency in state aid during the ten-year period (1913-1923) has been toward an actual increase not only in the policy of subsidizing projects which will encourage extensions of the public school system but also in the total number of states participating. The facts from Tables 1 and 2 show that the activity of the states in subsidizing educational projects increased 95 per cent, and the aggregate of projects aided by states increased 89 per cent. When viewed in the light of a former practice, these data would tend to set aside the last decade of our educational progress as a period when the importance of the idea of state aid has been given new impetus, and the desirability of state subsidy has been given increased popularity.

SPECIFIC PRACTICE

In order to discover what projects are the most popular, reference to Table 1 will suffice. A range of practice extending from projects for which only one state is granting subsidy to those for which thirty-two states are granting subsidy is disclosed. In the latter instance, the high school projects rank first in order of popularity for state aid, followed by agriculture, consolidation, equalization, normal training, home economics, transportation, and libraries in the order given here. A further inspection of Table 1 discloses the fact that prior to 1913, forty different projects were subsidized by the states, which number increased

[5] These two purposes are "stimulation" and "equalization."

[6] Swift, Fletcher Harper. *State Policies in Public School Finance*, p. 13.

TABLE 1

STATES OFFERING STATE AID FOR EDUCATIONAL PROJECTS

Projects arranged in order of highest frequency of states and classified according to periods

Projects	Number of States Granting Subsidy				Total Number of States	Number of States Participating Since 1913	Per Cent Increase 1913–1923
	Periods						
	Prior to 1913	1914 to 1916	1917 to 1920	1921 to 1923			
High Schools	24	3	4	1	32	8	33
Agriculture	22	4	4	0	30	8	36
Consolidation	11	6	6	3	26	15	136
Equalization	6	1	10	8	25	19	316
Normal Training	11	4	8	2	25	14	127
Home Economics	17	2	3	1	23	6	35
Transportation	5	5	5	6	21	16	320
Libraries	15	1	0	1	17	2	13
N-R Tuition	13	0	1	3	17	4	31
Weak Districts	11	1	3	1	16	5	45
Industrial Training	13	1	2	0	16	3	23
Manual Training	14	1	1	0	16	2	14
Buildings	5	3	6	2	16	11	220
Defectives	7	1	5	2	15	8	114
Evening Schools	10	0	5	0	15	5	50
Rural Schools	7	4	4	0	15	8	114
Superintendents	10	2	1	1	14	4	40
Supervisors	5	2	3	3	13	8	160
Americanization	1	0	8	3	12	11	1100
Part Time School	4	0	6	0	10	6	150
Graded Schools	7	1	1	1	10	3	42
Textbooks	5	2	1	1	9	4	80
Summer Schools	5	1	3	0	9	4	60
Vocational Training	2	4	1	1	8	6	300
Physical Training	0	2	5	1	8	8	
Participating Districts	1	0	5	1	7	6	600
Adult Classes	2	0	2	3	7	5	250
Apparatus	4	2	0	1	7	3	75
Inspectors	5	1	1	0	7	2	40
Tax-Exempt Property	0	0	3	3	6	6	
Education of Colored	2	0	1	2	5	3	150
Commercial Training	2	2	0	0	4	2	100
Cadet Training	1	0	1	1	3	2	200
Loss by Fire	0	0	3	0	3	3	
Model Rural School	0	1	0	1	2	2	
Extension of Term	1	0	1	0	2	1	100

TABLE 1 (*Continued*)

Projects	Number of States Granting Subsidy — Periods: Prior to 1913	1914 to 1916	1917 to 1920	1921 to 1923	Total Number of States	Number of States Participating Since 1913	Per Cent Increase 1913–1923
Orphans in Public School	0	0	1	1	2	2	
Exceptional Classes	0	0	1	1	2	2	
School Lunches	0	0	0	1	1	1	
School in Mining	0	0	1	0	1	1	
Migratory Laborers	0	0	0	1	1	1	
Civics	0	0	0	1	1	1	
Rural Entrants	0	0	1	0	1	1	
Depleted Schools	0	0	0	1	1	1	
Overcrowded Relief	0	0	1	0	1	1	
School Wagons	0	0	1	0	1	1	
Vacation Schools	0	0	1	0	1	1	
School Nurses	0	0	0	1	1	1	
Winter Terms (H. S.)...	0	0	1	0	1	1	
Physical Examinations..	0	0	1	0	1	1	
Bonus Mill School Tax..	0	1	0	0	1	1	
Summer Gardens	0	0	1	0	1	1	
Teacherages	0	0	1	0	1	1	
Tuition of Disabled	1	0	0	0	1	0	00.0
Parental Schools	1	0	0	0	1	0	00.0
Home Training	1	0	0	0	1	0	00.0
Current Expense	1	0	0	0	1	0	00.0
Bonus High School Grades	1	0	0	0	1	0	00.0
General Improvement ..	1	0	0	0	1	0	00.0
School Boy Bonus	1	0	0	0	1	0	00.0
Medical Inspection	1	0	0	0	1	0	00.0
Grand Total	256	58	124	60	498	242	95.0
Specific Projects	40	3	13	5	61		53.0

to sixty-one by 1923—an increase of 53 per cent. It is worthy of note that the greater part of this increase developed during the period from 1917 to 1920, at which time the following thirteen new projects were introduced: teacherages, summer gardens, physical examinations, winter terms for high schools, vacation schools, school wagons, overcrowding relief, rural entertainments, schools in mining camps, exceptional classes, orphans in public schools, loss by fire, and tax-exempt property. From 1921 to 1923 the following five additional projects were introduced:

TABLE 2

EDUCATIONAL PROJECTS SUBSIDIZED BY THE STATES

States arranged in order of highest frequency of projects and classified according to periods

STATES	NUMBER OF PROJECTS AIDED BY THE STATE				TOTAL NUMBER OF PROJECTS	NUMBER OF PROJECTS SUBSIDIZED SINCE 1913	PER CENT INCREASE 1913–1923
	Periods						
	Prior to 1913	1914 to 1916	1917 to 1920	1921 to 1923			
Minnesota	13	3	3	2	21	8	61
South Carolina	8	4	6	1	18	11	138
Connecticut	8	0	6	4	18	10	125
Rhode Island	12	3	2	1	18	6	50
New York	12	2	2	2	18	6	50
Pennsylvania	7	4	3	3	17	10	142
Maine	12	0	3	2	17	5	41
Wisconsin	10	1	6	0	17	7	70
Vermont	8	4	0	5	17	9	113
New Jersey	12	1	3	0	16	4	33
Tennessee	10	1	3	1	15	5	50
Maryland	8	3	1	3	15	7	88
Delaware	7	1	6	0	14	7	100
Massachusetts	12	0	2	0	14	2	17
Texas	4	2	3	4	13	9	225
Virginia	9	0	3	1	13	4	44
South Dakota	1	0	10	2	13	12	1200
Iowa	6	0	5	1	12	6	88
Washington	12	0	0	0	12	0	00.0
Ohio	3	6	2	0	11	8	100
North Carolina	5	0	4	2	11	6	120
Nebraska	6	3	1	1	11	5	83
West Virginia	5	1	4	1	11	6	120
Missouri	7	1	2	0	10	3	43
North Dakota	9	0	1	0	10	1	11
Nevada	2	3	4	1	10	8	400.0
Kansas	7	0	1	2	10	3	43.0
Louisiana	3	4	2	0	9	6	200.0
Alabama	3	2	2	2	9	6	200.0
Indiana	8	0	1	0	9	1	12
Arizona	1	5	3	0	9	8	800.0
Arkansas	2	0	5	1	8	6	300.0
California	5	0	1	2	8	3	60.0
Oklahoma	1	1	2	3	7	6	600.0
Florida	2	1	3	0	6	4	200.0
Michigan	3	0	2	1	6	3	100.0

TABLE 2 (*Continued*)

States	Number of Projects Aided by the State				Total Number of Projects	Number of Projects Subsidized Since 1913	Per Cent Increase 1913–1923
	Periods						
	Prior to 1913	1914 to 1916	1917 to 1920	1921 to 1923			
Wyoming	0	1	2	3	6	6	
Montana	3	1	2	0	6	3	100.0
Utah	2	0	3	0	5	3	150.0
Colorado	2	0	1	1	4	2	200.0
Mississippi	2	0	0	2	4	2	100.0
New Mexico	3	0	1	0	4	1	33
New Hampshire	2	0	1	1	4	2	100.0
Illinois	2	0	1	0	3	1	50.0
Idaho	3	0	0	0	3	0	
Oregon	0	0	1	1	2	2	
Georgia	0	0	2	0	2	2	
Kentucky	1	0	0	0	1	0	
Grand Total	263	58	121	56	498	235	89.0
States	45	1	2	0	48		7.0

school nurses, depleted schools, civics, migratory laborers, and school lunches.

In conjunction with this situation, we discover from Table 2 that prior to 1913 all but three of the forty-eight states were subsidizing some type of project. The three states that had not at that time entered upon the policy of subsidizing an educational project involving the public school were Wyoming, Oregon, and Georgia. Wyoming, however, soon entered the ranks during the period from 1914 to 1916 and was followed by Oregon and Georgia during the period from 1917 to 1920. Since 1920, every state has offered subsidy to one or more educational projects.

Special mention should be made of the fact that if the basis for determining project popularity were based on the amount of increase which a project received in the number of states participating since 1913, equalization would merit first rank, inasmuch as nineteen states granted state aid to equalization after 1913. Transportation on this basis would rank second—with an increase of sixteen states; and consolidation would rank third—

with an increase of fifteen states. The greatest period of activity on the part of states for subsidizing projects obviously centers in the period from 1917 to 1920. The prior and subsequent periods have in a measure been marked by relatively the same degree of activity; but the outstanding projects having the greatest uniformity and regularity of increase during the ten-year period covered by the scope of this study are identified in the projects of consolidation and transportation.

On the other hand, if consideration is desired relative to the number of projects which are subsidized by the respective states, an inspection of Table 2* would show a range of practice extending from Kentucky, where only one project receives state aid, to Minnesota where twenty-one projects receive state aid. In the latter instance, Minnesota assumes first rank, in numerical order, with Connecticut, Rhode Island, New York, and South Carolina (each having eighteen projects) in alignment for second place in rank; and Wisconsin, Pennsylvania, Maine, and Vermont (each with seventeen projects) for third place in rank. The greatest period for the acquisition of projects among the states existed, as in the former instance, from 1917 to 1920. The three states exhibiting perhaps the most uniform and regular policy of project extension aid during the period covered by the scope of this study are Minnesota, Pennsylvania, and New York. From the standpoint of percentage of increase in the number of projects subsidized since 1913, South Dakota ranks first with twelve acquired projects, which represents an increase of 1,200 per cent; Arizona ranks second with eight acquired projects, representing an increase of 800 per cent; while Oklahoma ranks third with six acquired projects, representing an increase of 600 per cent.

SUBVENTIONS

An interesting aspect of the study* involves the record of state auditor's reports. Investigation shows that for some reason there has been at different times a temporary discontinuance of state aid on the part of some states for certain educational projects.

* A chart showing in detail the various specific educational projects subsidized by the states from 1913 to 1923 (based on auditor's reports, superintendent's reports, codes, statutes, and session laws of the states) is on reference in the original manuscript of the dissertation on file in Teachers College Library, Columbia University.

The aggregate of such sporadic reactions has during the ten-year period of this research touched more than 40 per cent of the total number of projects subsidized by all the states. The specific cause of such temporary discontinuance of state aid as it appears from the state auditors' reports remains to be checked as an interesting point of determination aside from the province of this study. With two exceptions,[7] however, it is sufficient to point out the fact that from an analysis of the session laws of the states, these temporary adjustments [8] have neither nullified the legislative enactment appertaining thereto nor changed an established state subvention policy toward educational projects in the public schools.

CORRELATIONS

The question might be raised as to what relationship exists between activity manifested by states in subsidizing projects and the educational ranks of those states on certain significant educational factors. If the states, for example, are ranked according to the number of projects subsidized, it might be expected that there would be some relationship between educational ranking, wealth per child, and amount of money spent for education; for the subsidizing of projects is generally considered to be one of the indications of interest in education. In order to find out whether this assumption is correct, the states were ranked in the order as indicated in Table 3. Here the number of projects subsidized appear in the first column, the Phillips' rank appears in the second column, wealth per child in the third, the average daily attendance for children enrolled in the fourth, and the index rank in the fifth.

The Phillips' rank was selected from an article written by Frank M. Phillips entitled "Educational Ranking of States by Two Methods" (*American School Board Journal,* December, 1924) in which he compares the effect of different methods of ranking, including that used by Dr. Leonard P. Ayres. The index rank is derived from an index average of five financial fac-

[7] One exception is that of Arkansas where a law granting special state aid to high schools was declared unconstitutional in 1916; and the other is that of California where in 1915 a county high school aid law was adopted by which free high school tuition was provided for all.

[8] These may have yielded to a new synthetic classification within the reports.

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TABLE 3

EDUCATIONAL RANKING OF STATES

STATES	(1) NUMBER OF PROJECTS SUBSIDIZED	(2) PHILLIPS' RANK	(3) WEALTH PER CHILD (5-14 yrs.)	(4) A.D.A.	(5) INDEX RANK
Minnesota	1	6	16	17	8
South Carolina	2	45	45	48	41
Connecticut	3	22	8	6	14
New York	4	4	10	4	2
Rhode Island	5	26	21	1	19
Wisconsin	6	11	29	9	22
Vermont	7	29	34	14	38
Pennsylvania	8	20	23	7	15
Maine	9	27	31	8	32
New Jersey	10	5	12	2	4
Maryland	11	31	32	16	18
Tennessee	12	43	41	43	44
Delaware	13	28	27	23	23
Massachusetts	14	21	13	11	11
Texas	15	36	38	37	39
Virginia	16	37	37	35	41
South Dakota	17	14	7	26	17
Washington	18	1	6	19	12
Iowa	19	12	5	15	26
Nebraska	20	18	11	20	27
Ohio	21	3	19	10	6
North Carolina	22	42	42	42	40
West Virginia	23	35	33	36	34
Nevada	24	16	1	24	3
Kansas	25	13	20	27	28
North Dakota	26	24	26	25	21
Missouri	27	32	28	29	31
Arizona	28	25	14	30	5
Indiana	29	10	24	22	20
Louisiana	30	40	40	38	35
Alabama	31	44	47	44	45
Arkansas	32	48	44	46	47
California	33	2	2	32	1
Oklahoma	34	34	39	39	33
Michigan	35	7	22	3	7
Florida	36	39	35	40	36
Wyoming	37	17	3	31	9
Montana	38	30	9	21	25
Utah	39	19	30	18	29
New Hampshire	40	33	18	12	30

TABLE 3 (*Continued*)

States	(1) Number of Projects Subsidized	(2) Phillips' Rank	(3) Wealth per Child (5-14 yrs.)	(4) A.D.A.	(5) Index Rank
New Mexico	41	41	36	34	37
Colorado	42	8	17	33	10
Mississippi	43	46	38	45	48
Idaho	44	23	25	28	24
Illinois	45	15	15	5	13
Oregon	46	9	4	13	16
Georgia	47	47	46	41	46
Kentucky	48	38	43	47	42

r 1–2 = .21 r 2–3 = .83 r 3–4 = .64 r 4–5 = .69
r 1–3 = .10 r 2–4 = .71 r 3–5 = .87
r 1–4 = .42 r 2–5 = .88
r 1–5 = .32

Ave. r = .26 Ave. r for columns 2 to 5 = .77

tors used by Dr. Ayres in his educational rank of the states.[9] These financial factors are enumerated as follows: expenditure per child attending school; expenditure per child of school age; expenditure per teacher employed; expenditure per pupil for purposes other than the teachers' salaries; and expenditure per teacher for salary. The value of this index lies in its expression of the degree to which the average of the five financial measures taken together approaches the standard of 100.

From these considerations then rank correlations were computed according to the Spearman rank formula, and the results transmuted into Pearson r equivalents. It will be noticed from Table 3 that the correlation between the number of projects subsidized and Phillips' rank, wealth per child, average daily attendance, and index rank are, respectively, .21, .10, .42, .32, with an average of .26. A further reference to Table 3 shows that the correlation between Phillips' rank and wealth per child is .83; between Phillips' rank and average daily attendance is .71; between Phillips' rank and the index rank is .88; between wealth per child and average daily attendance is .64; between wealth per child and the index rank is .87; between average daily attendance and index rank is .69. The average of these

[9] Ayres, Leonard P. *An Index Number for State School Systems*, p. 57.

correlations is .77. From these results it appears that, while the educational factors in columns 2, 3, 4, and 5 correlate well as a group, the number of projects subsidized in the states is to a marked extent independent of educational ranking, wealth per child, average daily attendance, and the amount of money spent for education.

SPECIAL CONSIDERATIONS

Before summarizing the conclusions of this chapter, the writer believes that points have arisen in the analysis of acquired data the interpretation and disposition of which should be a matter of record. Concerning the project of transportation, New Mexico was excluded from identity with states granting aid for this project because in this state the item of transportation is incorporated as part of the county budget allowed by the commissioners. This is also the situation for Maryland with the exception that transportation was included in the 24 per cent of the budget not to be used for salaries. New York and Rhode Island were recorded as giving aid both to transportation and consolidation because the law stipulated that the bonus grant, authorized in 1913 for consolidation, might be used for "teachers' salaries or transportation, etc." New York, however, provided a direct grant of state aid to consolidated districts in 1923. It is of interest that, while Mississippi, Washington, and West Virginia do not have legislative provision for state aid to transportation, this item is nevertheless placed under operating expenses and thus draws state aid as other operating expenses. In Virginia, aid is only granted to relieve horses and vehicles from toll when same are conveying pupils to educational institutions. Concerning the project of tuition of non-residents, Missouri was omitted from the list of states granting aid because aid is only granted in excess of a sixty-five cent levy if needed. This renders the aid virtually negligible. In the instance of California where aid is granted for one additional teacher unit for supervision, a record of this was incorporated under the project, "supervisors."

The policies of state aid as revealed in the practice of many states suggest an outstanding feature which is as incongruous as it is outgrown. Long since their establishment, "infant" depart-

ments have continued to be aided, while valuable and desirable new types of projects have been completely neglected.* It would be humorous, if it were not so tragic, to find, for example, Connecticut "stimulating" to-day well established undertakings, such as libraries (offered since 1856), industrial training (offered since 1909), and transportation (offered in 1904).

CONCLUSIONS

An analysis of the practice of state aid as set forth in this chapter presents evidence which suggests that the policy of state aid for educational projects in the public schools is in popular favor and suggests further the probability that there will be a continuance of increased activity with regard to the policy of state subsidy for educational projects. In the light of the substantial increase not alone in the activity of the states in subsidizing educational projects but also in the aggregate of projects undertaken, it would be difficult to construe the facts differently. While the greatest period of activity in state aid existed from 1917 to 1920, the previous and subsequent periods of activity were such as would indicate a strong growth in the recognition which states are constantly giving to subventions of the nature herein discussed. It is evident that equalization, transportation, and consolidation have received the greatest impetus within the decade covered by this research; and that the states of South Dakota, Arizona, and Oklahoma have shown the greatest activity during this period in the adoption of projects for state subsidy.

The evidence in this chapter suggests further that the number of projects subsidized by a state is to a marked extent independent of its educational ranking, wealth per child, average daily attendance, and amount of money spent for education. The practice of many states indicates a tendency to continue state aid for "infant" projects, long after these "infant" projects have been established. This tendency is carried on at the expense of valuable new projects which might well be initiated.

* A chart showing in detail the various specific educational projects subsidized by the states from 1913 to 1923 (based on auditor's reports, superintendent's reports, codes, statutes, and session laws of the states) is on reference in the original manuscript of the dissertation on file in Teachers College Library, Columbia University.

CHAPTER II

STATE AID AS IT DIRECTLY AFFECTS THE CLASSROOM PRODUCT

This chapter purposes to set apart the problem of special aid from that of general aid in its relation to the public schools of the state, and considers special aid as that reward which is granted for specific projects directly affecting the classroom product. "Special projects," then, as the term is used here embraces only those specific services, enterprises, or activities directly involving the children in attendance at public schools.

According to current usage, the term "special aid" refers to any aid given by the state for a specific educational purpose. Obviously, the term "special" should indicate a differentiation from "general" aid for school purposes. The interpretation advanced above will therefore differentiate the term on an arbitrary basis which pivots on the purpose for which aid is given. Inasmuch as home economics, agriculture, industrial, and vocational training are involved in federal aid as well as state aid, these projects were deliberately omitted from this special consideration.

IMPORTANCE OF SPECIAL AID

A study of the theory and principle of "encouraging educational progress" enables one to recognize that there exist to-day two distinct movements which may be thought of as representing two major schools of thought—each, in turn, eagerly and earnestly propounding its notion as to what constitutes the proper practice in reference to special aid for the encouragement and progress of education.

Exponents[1] of the first school tell us that their conception and practice of special aid is to grant subsidy to a wide range of meritorious projects of *local* interest, application, and consumption. Such general projects, they say, would be those of

[1] Cubberly, Ellwood P. *State School Administration*, 1927.

an attractive nature which would induce new and progressive types of educational effort and interest on the part of individual localities, *e.g.*, school libraries, clinics, teacher helpers, physical education, etc. "Our practice," they tell us, "would accept any educational feature or activity, the promotion or establishment of which would demonstrate local initiative or effort."

Exponents [2] of the second school tell us that their conception and practice of special aid is to grant subsidy to a narrow range of highly selected projects of *general* interest, application, and consumption. Such specific projects, they say, would be those of an experimental or research character, giving promise of large returns in results and materials, which would contribute mutually to *all* schools of the state, *e.g.*, general data, reports, information, publicity, courses of study, methods, standards, demonstrations, etc. "Our practice," they tell us, "would accept any educational feature or activity which would coördinate, direct, or assist *all* the educational forces of the state."

Thus, with the controversial points of view set before us, the writer has undertaken in this chapter to make an analysis of the practice of granting state aid to those projects which directly affect the classroom product, and which in a measure might be considered to possess an element common to both points of view.

SPECIAL PRACTICE

A reference to Tables 4 and 5 shows that within the decade selected for this research the activity of states in subsidizing special projects (as well as the aggregate of special projects aided by states) increased 125 per cent. This, when compared with the practice discussed in Chapter I, indicates a marked trend toward the granting of aid to special projects as understood within the meaning attached to the term as it is used in this chapter.

It may be observed from Table 4 that prior to 1914 the various states were subsidizing but eleven different projects. This number, however, increased to sixteen by 1923, a gain of 45 per cent. The major part of this gain lies in the percentage of increase developed during the period from 1917 to 1920 when three new projects were introduced for subsidy. These projects

[2] Mort, Paul R. *State Support for Public Schools*, 1926.

were rural entertainments, exceptional children's class, and the summer garden class. During the previous period (1914-1916), Rhode Island and New York had introduced physical training as a special project; and the subsequent period (1921-1923) enrolled civics as a special project for state aid.

The range of special projects which are subsidized by a state may be found in Table 5 to extend from zero—Mississippi, Oklahoma, New Mexico, Kentucky, Idaho, and Georgia grant no aid for special projects—to seven—Wisconsin and Minnesota are each granting aid to this same number of special projects. In this instance, Wisconsin and Minnesota both grant aid to libraries, normal training, manual training, transportation, commercial training, and defectives, and in addition Minnesota

TABLE 4

STATES OFFERING STATE AID FOR SPECIAL PROJECTS

Projects arranged in order of highest frequency of states and classified according to periods

Projects	Number of States Granting Subsidy				Total Number of States	Number of States Participating Since 1913	Per Cent Increase 1913–1923
	Periods						
	Prior to 1914	1914 to 1916	1917 to 1920	1921 to 1923			
Normal Training	11	4	8	2	25	14	127
Transportation	5	5	5	6	21	16	320
Libraries	15	1	0	1	17	2	13
Manual Training	14	1	1	0	16	2	15
Defectives	7	1	5	2	15	8	114
Americanization	1	0	8	3	12	11	1,100
Physical Training	0	2	5	1	8	8	
Adult Classes	2	0	2	3	7	5	250
Commercial Training	2	2	0	0	4	2	100
Cadet Training	1	0	1	1	3	2	200
Exceptional Classes	0	0	1	1	2	2	
Civics	0	0	0	1	1	1	
Home Training	1	0	0	0	1	0	0
Summer Garden Classes	0	0	1	0	1	1	
Medical Inspection	1	0	0	0	1	0	
Rural Entertainment	0	0	1	0	1	1	0
Grand Total	60	16	38	21	135	75	125
Specific Projects	11	1	3	1	16		45

TABLE 5

SPECIAL PROJECTS SUBSIDIZED BY THE STATES

States arranged in order of highest frequency of projects and classified according to periods

STATES	NUMBER OF PROJECTS AIDED BY THE STATE				TOTAL NUMBER OF PROJECTS	NUMBER OF PROJECTS SUBSIDIZED SINCE 1913	PER CENT INCREASE 1913–1923
	Periods						
	Prior to 1914	1914 to 1916	1917 to 1920	1921 to 1923			
Minnesota	5	2	0	0	7	2	40
Wisconsin	4	0	3	0	7	3	75
New York	2	2	1	1	6	4	200
Rhode Island	2	2	2	0	6	4	200
Iowa	3	0	2	0	5	2	67
Maine	1	0	3	1	5	4	400
New Jersey	4	0	1	0	5	1	25
North Carolina	1	0	2	2	5	4	400
Virginia	4	0	1	0	5	1	25
Wyoming	0	0	2	3	5	5	
Connecticut	2	0	1	1	4	2	100
Delaware	2	0	2	0	4	2	100
Massachusetts	3	0	1	0	4	1	33
Maryland	2	1	0	1	4	2	100
Michigan	2	0	1	1	4	2	100
Nebraska	2	1	0	1	4	2	100
Pennsylvania	1	2	0	1	4	3	300
South Carolina	2	0	2	0	4	2	100
Tennessee	2	1	0	1	4	2	100
Vermont	3	1	0	0	4	1	33
Alabama	1	0	0	2	3	2	200
Arizona	0	1	2	0	3	3	
Ohio	1	2	0	0	3	2	200
South Dakota	1	0	1	1	3	2	200
Texas	1	0	0	2	3	2	200
Arkansas	1	0	1	0	2	1	100
California	1	0	1	0	2	1	100
Kansas	1	0	0	1	2	1	100
Montana	1	0	1	0	2	1	100
Missouri	1	0	1	0	2	1	100
Nevada	0	1	1	0	2	2	
West Virginia	1	1	0	0	2	1	100
Washington	1	0	0	0	1	0	0
Utah	0	0	1	0	1	1	
Oregon	0	0	0	1	1	1	
North Dakota	1	0	0	0	1	0	0

TABLE 5 (*Continued*)

States	Number of Projects Aided by the State				Total Number of Projects	Number of Projects Subsidized Since 1913	Per Cent Increase 1913-1923
	Periods						
	Prior to 1914	1914 to 1916	1917 to 1920	1921 to 1923			
New Hampshire	0	0	0	1	1	1	
Louisiana	0	0	1	0	1	1	
Illinois	1	0	0	0	1	0	0
Indiana	0	0	1	0	1	1	
Florida	0	1	0	0	1	1	
Colorado	0	0	1	0	1	1	
Oklahoma	0	0	0	0	0	0	
New Mexico	0	0	0	0	0	0	
Mississippi	0	0	0	0	0	0	
Kentucky	0	0	0	0	0	0	
Idaho	0	0	0	0	0	0	
Georgia	0	0	0	0	0	0	
Grand Total	60	18	36	21	135	75	125
States	32	3	5	2	42		19

grants aid to home training while Wisconsin grants aid to exceptional classes.

A further scrutiny of Table 5 indicates that prior to 1914 only thirty-two states were granting state aid to special projects. Ten additional states were added to this list by 1923, of which three entered during the period from 1914 to 1916, five from 1917 to 1920, and two from 1921 to 1923. The six states that were not granting aid in 1923 were Oklahoma, New Mexico, Mississippi, Kentucky, Idaho, and Georgia.

CONCLUSION

That the approval of special aid is favorably entrenched in the growing consideration of state legislatures is a conclusion which the evidence presented in this chapter seems to suggest. When viewed in the light of the evidence presented in the preceding chapter there exists a well-established implication of an advancing trend on the part of states, for state subventions which will directly encourage and sustain desirable educational activities of the public schools. In order to assist in a more

intelligent formulation of state aid policies and in a more constructive administration of such policies, the writer will attempt to measure in Part II of this research the accomplishment which the advancement of such aid has sought to bring about.

PART II

PRELIMINARY STATEMENT

In the attempt to determine how special subsidy has functioned as a device for use by states in accomplishing educational progress, it seemed feasible (in view of the magnitude of the study) to select the four most outstanding projects on which the best quality and quantity of data were available. Every effort has been made to assemble all available data bearing specifically on these projects and to derive within the limitations of these data as many pertinent units of measure as possible.

TYPE OF DATA REJECTED

A careful analysis of data contained in the reports of superintendents of public instruction convinced the writer that material from this source could be accepted neither as reliable nor as satisfactory. The reports of superintendents of public instruction vary widely among themselves. Some are carefully edited and contain a great deal of information; others are of the most perfunctory sort, meager in information, and full of apparent inconsistencies. A key to the situation may be furnished by the following experience of a Missouri superintendent in attempting to construct a table from data sent in by his county superintendents:

> The table for third-class schools is the acme of incongruities. The year 1913 shows an increase of 362 volumes with a corresponding rise in valuation of $2,196, or $6.06 per volume. Very expensive volumes must have been added to said libraries during 1913. The next year's record shows an increase of 21,439 in volumes and $13,513 in valuation; a most remarkable growth. The climax of improbabilities is reached in 1915 when a decrease of 3,016 volumes represents an increase of $6,842 in value. . . . "From the above tabulations," the superintendent decides, "we are forced to draw the conclusion that much of the library data is false."[1]

In varying degrees, the same conclusion must be drawn in regard to most of the data found in the reports of state super-

[1] *Sixty-seventh Missouri Report*, p. 102, 1916.

intendents. Much of it represents guesswork. To illustrate again, the repeated phrase "almost one-half of all the school districts of North Carolina are now provided with rural libraries" suggested an inquiry to determine the exact ratio involved here.

Year	Number of Schools	Number of Libraries	Ratio of Libraries to Schools
1901	8,064		
1902	8,115	472	6-100
1903	7,737		
1904	7,674	906	12-100
1905	7,578		
1906	7,488	1,305	17-100
1907	7,533		
1908	7,536	1,892	25-100
1909	7,651		
1910	7,645	2,420	32-100
1911			
1912			
1913	7,688		
1914	7,565	3,609	48-100
1915	7,818		
1916	7,856	4,102	52-100
1917	7,825		
1918	7,767	4,412	57-100
1919	7,557		
1920	7,688	4,686	61-100
1921	7,637		
1922	7,333	4,882	67-100
1923	7,147	4,995	70-100
1924	6,830		

From this it is apparent that the phrase was used inaccurately. Besides this, it shows that North Carolina has made even better progress than was suggested in the establishment of school libraries.

TYPE OF DATA SELECTED

Recourse was accordingly made to the biennial survey reports of the United States Bureau of Education. In selecting the statistical data for this study from the Federal Bureau of Education, it was realized that all data would be available from substantially uniform and reliable records that would be, in

general, as fair to each state as to each other state, and that would be of such nature as to be reliable if not precise.

Every endeavor has been made to insure the accuracy of the figures herein presented. They have been carefully checked and finally subjected to an independent recomputation in the attempt to find and exclude any errors.

CHAPTER III

EFFECT OF SPECIAL SUBSIDIES ON CONSOLIDATION

One of the outstanding projects favored with special subsidies by many states is consolidation. The consolidation especially encouraged is of predominately rural territory. In this discussion territory is considered as rural unless it contains towns of more than 2,500 inhabitants. A consolidated school is defined as one composed of two or more schools combined into one administrative unit with a school building of two or more rooms.

It is not the purpose of this chapter to defend or attack consolidation. It is assumed that consolidation of rural territory into larger administrative units is an end in which states are interested regardless of whether they have or have not inaugurated a system of special subsidies for consolidation. The only reason for a special subsidy for consolidation is to stimulate their interests in the promotion of consolidation. It is the purpose of this chapter to investigate what has been happening in the way of consolidation in those states which have been giving special aid to this project. In contrast, the same factors will be studied in those states which do not give special aid.

It is important to state at the outset that no one factor considered in this discussion can be accepted as conclusive. Each will illuminate only a small portion of this problem. The final impression will be a composite derived from many points of view. It is impossible to get any single unit measure of comparison between these states which is impervious to attack. Each measure will distort some part of the picture and when one is employing that measure he must be fully conscious of its limitations.

To begin with, reliable data for recent years have been very difficult to secure. But, since the purpose of this chapter is to study merely the effect that state aid has on consolidation, and because twenty-three of the twenty-six states giving aid to con-

solidation have adopted such a policy since 1910, and because no state-wide educational survey or campaign was seriously undertaken by any state in the Union prior to 1914, what happened during those years is to a considerable degree indicative of present-day conditions.

RECENT CONSOLIDATION EFFECTED

In 1922 twenty-six states were giving special aid to consolidation and twenty-two were not. Table 6 shows the number of consolidated schools in states giving aid and those not giving aid.

It will be observed that the states were grouped into five sections according to geographical location. This was done in order to facilitate a comparison of the more or less similar states. This division is purely arbitrary but it is believed that it partially answers the question of geographical location which is raised instantly when comparisons are started.

UNITS FOR COMPARISON

Of course, comparisons of raw numbers of consolidations in the several states mean nothing. The three consolidated schools in Rhode Island seem insignificant when placed alongside the seven hundred fifty-seven consolidated schools of Texas but under certain circumstances they might be quite as significant.

The first thing to do then is to get some common units for comparison of the amount of consolidation going on in states giving and not giving special aid to consolidation. If this is done, each state can be considered as an experimental plot, the results in one state being given equal weight with the results in another state. Average daily attendance might be suggested but this would have to be discarded at once due to the number of private schools in the East. Total population is objectionable because states with a large urban population would distort the conclusions until they would mean little.

AMOUNT OF CONSOLIDATION COMPARED

In order to correct the major objections to each unit measure, the following six were used: (1) average number of consolidated schools per state per 100,000 rural population, 1922; (2) average

TABLE 6

NUMBER OF CONSOLIDATED SCHOOLS IN STATES GIVING AND NOT GIVING SPECIAL SUBSIDIES FOR CONSOLIDATION

STATES GIVING AID	NUMBER OF CONSOLIDATED SCHOOLS 1922 *	STATES NOT GIVING AID	NUMBER OF CONSOLIDATED SCHOOLS 1922 *
EAST		EAST	
Maine	38[a]	Connecticut	
New Jersey	263	Massachusetts	
New York	392	New Hampshire	21
Pennsylvania	275	Vermont	59
Rhode Island	3		
SOUTH		SOUTH	
Delaware	12	Alabama	219
Georgia	420	Arkansas	170
Louisiana	1,311	Florida	81
South Carolina	250	Kentucky	168
Tennessee	482	Maryland	
Texas	757	Mississippi	625
West Virginia	246	North Carolina	355
		Virginia	612
GREAT LAKES		GREAT LAKES	
Michigan	198	Illinois	116
Ohio	1,010	Indiana	946
Wisconsin	72		
GREAT PLAINS		GREAT PLAINS	
Iowa	378	Kansas	152
Minnesota	315		
Missouri	247		
Nebraska	105		
North Dakota	459		
Oklahoma	287		
South Dakota	181		
WEST		WEST	
Idaho	46	California	429[b]
Nevada	8	Colorado	166
Oregon	77	Arizona	11
Washington	314	Montana	99
		New Mexico	
		Utah	
		Wyoming	46

* Data from reports of U. S. Bureau of Education.

a. Townships with all schools consolidated.

b. Union schools, joint unions, and consolidated schools.

number of total rural families per consolidated school, per state, 1920; (3) average number of total rural population, per consolidated school, per state, 1920; (4) average number of total acreage of improved farm lands per consolidated school per state, 1920; (5) percentage of the total number of consolidated and one-room schools which are consolidated; and (6) decrease in the number of one-room schools (1918-1923). The data for the first four of these items are given in Table 7.

This table shows that the average number of consolidated schools per state per 100,000 rural population in 1922 for states giving aid was 27.3 and for states not giving aid, 23.5. Considering only raw averages, it would seem that slightly more consolidation was going on in states where state aid is given to consolidation. But these averages need statistical interpretation to determine their significance. For this purpose, the critical ratio technique [1] developed by Dr. J. R. McGaughy was used.

Briefly, when the critical ratio is computed and is found to be as much as three, this means that there is only one chance in 47 that the difference is due to error or inadequate sampling of total cases. It is generally accepted that the critical ratio must be as much as three or more before dependence can be placed on the accuracy of reporting or the sufficiency of the sampling. If, for example, the critical ratio is one, the chances that the difference is due to error or inadequate sampling of total cases are one to three. For a critical ratio of two, there is one chance in ten. Obviously, these are too high for reliable prediction or conclusion.

When the critical ratio of the difference between the means of the states that give aid for consolidation and those that did not was computed for the measure of the average number of consolidated high schools per 100,000 rural population per state, it was found to be .9. Therefore no dependence can be placed on the difference attached to the means of these two distributions. It might be pointed out that the small number of cases in each distribution and the wide range within the distributions tend to produce a small critical ratio. However, these are only additional reasons why little significance should be attached to

[1] A complete explanation of this technique can be found in Volume V of the Educational Finance Inquiry Report, *Fiscal Administration of City School Systems* by J. R. McGaughy, pp. 69-74.

TABLE 7

AVERAGE NUMBER OF CONSOLIDATED SCHOOLS PER STATE BY FOUR UNITS OF MEASURE IN STATES GIVING STATE AID TO CONSOLIDATION

STATES	AVERAGE NUMBER OF CONSOLIDATED SCHOOLS PER STATE, PER 100,000 RURAL POPULATION, 1922	AVERAGE NUMBER OF TOTAL RURAL POPULATION, PER CONSOLIDATED SCHOOL, PER STATE, 1920	AVERAGE NUMBER TOTAL ACREAGE OF IMPROVED FARM LANDS PER CONSOLIDATED SCHOOLS, PER STATE, 1920 (Expressed in 100-acre units)	AVERAGE NUMBER OF TOTAL RURAL FAMILIES PER CONSOLIDATED SCHOOL, PER STATE, 1920
EAST				
Maine	8.1	4,004	169	987
New Jersey	38.7	7,402	169	1,734
New York	21.9	5,072	372	1,292
Pennsylvania ..	8.8	22,717	865	4,959
Rhode Island ..	20.0	5,072		
SOUTH				
Delaware	12.0	7,303	466	1,768
Georgia	19.4	6,322	414	1,426
Louisiana	112.1	1,019	49	1,669
South Carolina .	18.0	4,632	206	931
Tennessee	27.9	3,597	233	766
Texas	24.0	4,961	492	1,044
West Virginia ..	22.6	7,550	381	1,549
GREAT LAKES				
Michigan	13.8	6,762	613	1,648
Ohio	48.6	2,266	202	561
Wisconsin	5.2	18,094	1,557	3,809
GREAT PLAINS				
Iowa	24.7	5,307	993	1,261
Minnesota	23.7	5,237	842	1,117
Missouri	13.6	10,816	1,478	2,566
Nebraska	11.8	8,822	2,288	2,036
North Dakota ..	82.0	1,222	537	253
Oklahoma	19.3	5,682	692	1,207
South Dakota ..	34.2	3,847	1,309	852
WEST				
Idaho	14.8	7,630	1,100	1,758
Nevada	13.3	4,144	3,965	1,207
Oregon	19.7	6,432	806	1,658
Washington	51.5	2,219	260	5,545
Average	27.3	6,488	778	1,744

Rural population is defined as that residing outside of incorporated places having 2,500 inhabitants or over. Towns in New Hampshire, Massachusetts, and Rhode Island were included with incorporated places.

Improved Farm Lands is defined as all land regularly tilled and mowed, land in pasture which has been cleared or tilled, land lying fallow, land in gardens, orchards, vineyards, and nurseries, and land occupied by farm buildings.

the difference of the means of these two groups in this item of comparison.

It must be borne in mind that the purpose of these measures is to detect a significant difference, if any, in the amount of consolidation going on in these two groups of states, holding all the other major determining factors in mind as far as possible. It might be argued that the states which give aid as a group have adopted the practice of including more territory and population into a unit of consolidation than the other group, or vice versa. Although the two groups of states might show relatively little difference in amount of consolidation, one group might be providing more educational opportunity through consolidation than another. There are no data available on the relative population included in consolidated units. However, the figures for the total rural population are available and the average total rural population for a consolidated school for each state is shown in the second column of Tables 7 and 8. The mean for the states giving aid is 6,488 and the mean for those not giving aid is 8,040. This appears at first glance to show that the rural population of the states giving aid have more consolidated schools than the other group. But when the critical ratio is computed it is found to be only 1.4, thereby again indicating as far as total number of units of consolidation is concerned, that there is no significant difference between those states giving aid and those not giving aid to consolidation. The figures expressed in the second column of the two tables simply present another way of expressing the same thought as that embodied in the first column of these tables.

It might be argued that one of these two groups of states might have a predominately higher population per cultivable area than the other and that although a thinly populated section might show a high number of consolidated schools per rural population, when considered from the standpoint of improved farming land, it would show a relatively small number of consolidated schools when considered from the standpoint of improved land. This would, of course, reveal that a higher percentage of the rural population did not have the advantages of consolidation that were indicated by the first measure. So the average number of acres of improved farm land per consolidated school per state

TABLE 8

AVERAGE NUMBER OF CONSOLIDATED SCHOOLS PER STATE BY FOUR UNITS OF MEASURE IN STATES NOT GIVING STATE AID TO CONSOLIDATION

STATES	AVERAGE NUMBER OF CONSOLIDATED SCHOOLS PER STATE, PER 100,000 RURAL POPULATION, 1922	AVERAGE NUMBER OF TOTAL RURAL POPULATION, PER CONSOLIDATED SCHOOL, PER STATE, 1920	AVERAGE NUMBER TOTAL ACREAGE OF IMPROVED FARM LANDS PER CONSOLIDATED SCHOOLS, PER STATE, 1920 (Expressed in 100-acre units)	AVERAGE NUMBER OF TOTAL RURAL FAMILIES PER CONSOLIDATED SCHOOL, PER STATE, 1920
EAST				
Connecticut ...				
Massachusetts ..				
New Hampshire	13.1			
Vermont	24.6			
SOUTH				
Alabama	11.9	5,606	302	1,175
Arkansas	11.6	8,598	542	1,882
Florida	13.3			
Kentucky	9.4	4,223	212	584
Maryland		3,224	174	703
Mississippi	40.3	2,481	149	549
North Carolina.	17.1			
Virginia	37.3	6,338	367	1,281
GREAT LAKES				
Illinois	5.6	26,694	3,499	6,322
Indiana	65.2	1,392	160	350
GREAT PLAINS				
Kansas	13.2	7,574	2,593	
WEST				
California	39.0	15,562	2,013	2,331
Colorado	33.9	3,331	530	4,746
Arizona	5.0	7,470	246	811
Montana	26.1	5,456	1,595	1,772
New Mexico ...		10,186	5,921	1,411
Utah				2,340
Wyoming	32.9	12,459	1,911	3,166
Average	23.5	8,040	1,348	1,962

was computed for 1920. The mean for the states giving aid to consolidation was 778 and for those not giving aid was 1,348. This seems rather significant until it is observed that the high average is due largely to the large number of acres per con-

solidated school in New Mexico. However, the critical ratio technique eliminates this fallacy, for when computed it was found to be only 1.9 and therefore not significant. It can be concluded therefore that sparsely settled regions are not characteristic of either group but are common to both and finally tend to balance each other.

The fourth measure taken was that for rural families per state per consolidated school. Sizes of families in the various states are known to vary and it might be proposed that the number of consolidated schools per rural family is more indicative of the amount of consolidation going on than the number of consolidated schools per total rural population. The average for states giving aid was 1,744 rural families per consolidated school and 1,962 for those that did not give aid in 1920. The critical ratio is only .7 and therefore the difference is of no significance. As in the above case, it would seem to indicate that states with both large and small average families were in each group, thus tending to eliminate size of family as an influencing factor in stating the amount of consolidation.

But much has happened in the way of consolidation since 1922. Perhaps one of the most potent arguments for consolidation is the provision of opportunity for a high school education in rural communities. Many states give special aid to consolidated high schools. A special study was made of the effect of state aid on consolidated high schools. Mr. C. M. Phillips, Chief Statistician of the Bureau of Education, Washington, D. C., was able to furnish this information up to and including the school year 1925-1926. Table 9 shows the average number of consolidated high schools per state per 100,000 rural population (1920 census) for the states that give special aid to high school consolidation and those that do not. The mean for the first group is 8.7 and for the latter group, 5.8. While the difference is in favor of the aided group and may represent a true difference, no dependence can be placed on it, for the critical ratio is only 1.78.

But many states give special aid for transportation of high school students. This could possibly influence consolidation quite as much as direct aid for consolidation, that is, a state not giving direct aid for high school consolidation might be encouraging it quite as much by giving special aid for trans-

TABLE 9

EFFECT OF STATE AID FOR HIGH SCHOOL CONSOLIDATION UPON HIGH SCHOOL CONSOLIDATION

STATE	CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION (1920 CENSUS) FOR STATES IN 1925-26 GIVING AID TO CONSOLIDATION	STATE	CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION (1920 CENSUS) FOR STATES IN 1925-26 NOT GIVING AID TO CONSOLIDATION
Maine	1.3	New Jersey	1.8
New York	1.9	Pennsylvania	2.2
Rhode Island	0.0	Connecticut	1.8
Georgia	5.2	Massachusetts	0.0
South Carolina	4.0	New Hampshire	0.0
Texas	3.5	Vermont	1.7
West Virginia	4.9	Delaware	.6
Michigan	4.6	Louisiana	3.2
Wisconsin	2.0	Tennessee	1.0
Iowa	23.7	Alabama	1.0
Minnesota	17.0	Arkansas	3.3
Maryland	14.6	Florida	6.7
Nebraska	9.2	Kentucky	2.7
North Dakota	37.9	Maryland	0.0
Oklahoma	10.3	Mississippi	11.1
South Dakota	10.8	North Carolina	11.5
Idaho	5.4	Virginia	1.8
Oregon	4.1	Ohio	8.0
Washington	5.8	Illinois	16.1
		Indiana	7.1
		Kansas	5.7
		Nevada	6.5
		California	0.0
		Colorado	10.5
		Arizona	1.4
		Montana	10.0
		New Mexico	16.9
		Utah	15.4
		Wyoming	19.0
Average	8.7	Average	5.8

portation. Table 10 shows the number of consolidated high schools per state per 100,000 rural population for states giving and not giving special aid to transportation.

TABLE 10

EFFECT OF STATE AID FOR TRANSPORTATION UPON CONSOLIDATION OF HIGH SCHOOLS

STATE	NUMBER OF CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION FOR STATES GIVING AID TO TRANSPORTATION, 1925-1926	STATE	NUMBER OF CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION FOR STATES NOT GIVING STATE AID TO TRANSPORTATION, 1925-1926
Maine	1.3	Georgia	5.2
New Jersey	1.8	Louisiana	3.2
New York	1.9	South Carolina	4.0
Pennsylvania	2.2	Tennessee	1.0
Rhode Island	0.0	West Virginia	4.9
Connecticut	1.8	Alabama	1.8
Massachusetts	0.0	Arkansas	3.3
New Hampshire	0.0	Florida	6.7
Vermont	1.7	Kentucky	2.7
Delaware	8.8	Mississippi	11.1
Texas	3.5	Virginia	1.8
Maryland	0.0	Illinois	16.1
North Carolina	11.5	Iowa	23.7
Michigan	4.6	Missouri	14.6
Ohio	2.0	Nebraska	9.2
Wisconsin	8.0	North Dakota	37.9
Indiana	7.1	Oklahoma	10.3
Minnesota	17.0	South Dakota	10.8
Kansas	5.7	Idaho	5.4
Washington	5.8	Nevada	6.5
Arizona	1.4	Oregon	4.1
New Mexico	10.2	California	0.0
Wyoming	19.0	Colorado	10.5
		Montana	10.0
		Utah	15.4
Average	5.0	Average	8.8

The average for the first group is 5.0 and for the second, 8.8. The critical ratio is 2.83. While this is not a significant difference it is very nearly so. This would seem to indicate that a state giving special aid to transportation was actually discouraging consolidation. But, as state aid for transportation is likely to influence amount of consolidation, state aid for consolidation might affect conclusions drawn concerning the results of state aid for transportation. But eight states give aid for both

consolidation and transportation and fourteen states give special aid to neither. Therefore, what is happening in these states is of particular significance. Table 11 shows the number of consolidated high schools per 100,000 rural population in 1925-1926. The average for the states giving aid to both consolidation and transportation is 4.5 consolidated high schools per 100,000 rural population and for those states giving aid to neither, the average is 6.4. This would seem to indicate that special aid was a discouragement to consolidation, but when the critical ratio is computed, it is found to be only 1.25 and is therefore not significant. The difference may be due to chance or to inaccuracies in the measures or some other operative factors not known. It could be inferred perhaps that special aid for consolidation and transportation are not so extremely powerful in their influence or they would subdue the other factors. The same thing can

TABLE 11

NUMBER OF CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION IN STATES GIVING STATE AID AND NOT GIVING STATE AID TO CONSOLIDATION AND TRANSPORTATION IN 1925-1926

STATE	AVERAGE NUMBER OF CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION IN STATE GIVING STATE AID BOTH TO CONSOLIDATION AND TRANSPORTATION (1925-1926)	STATE	AVERAGE NUMBER OF CONSOLIDATED HIGH SCHOOLS PER 100,000 RURAL POPULATION IN STATES GIVING (1925-1926) NEITHER AID FOR CONSOLIDATION NOR TRANSPORTATION
Maine	1.3	Louisiana	3.2
New York	1.9	Tennessee	1.0
Rhode Island	0.0	Alabama	1.8
Texas	3.5	Arkansas	3.3
Michigan	4.6	Florida	6.7
Wisconsin	2.0	Kentucky	2.7
Minnesota	17.0	Mississippi	11.1
Washington	5.8	Virginia	1.8
		Illinois	16.1
		Nevada	6.5
		California	0.0
		Colorado	10.5
		Montana	10.0
		Utah	15.4
Average	4.5	Average	6.4

be said of the effect of state aid for consolidation or consolidation as studied earlier in this chapter.

Still another measure of the amount of consolidation going on in states giving and not giving aid to consolidation is the per cent of the total number of consolidated and one-room schools which are one-room schools. In many ways that is perhaps as fair a measure as one could devise. Since these percentages are computed from raw figures only, the influence of a small state like Rhode Island is practically lost, when its numbers are compared with Texas. However, one could consider the conclusions given by this measure as the result not of a number of separate experiments for determining the effect of the policy of distributing state aid but as one in which all the states giving aid are massed into one experiment, and all those not giving aid to consolidation are lumped into another experiment to determine what will happen when no aid is given.

Table 12 shows the percentages for the states by groups and for the country as a whole for the years 1922 and 1920.

TABLE 12

PER CENT OF TOTAL NUMBER CONSOLIDATED AND ONE-ROOM SCHOOLS WHICH ARE CONSOLIDATED SCHOOLS

PERIOD	STATUS	EAST	SOUTH	GREAT LAKES	GREAT PLAINS	WEST	TOTAL
1922	With State Aid	4.5	13.0	6.2	3.9	8.5	6.6
	Without Aid	4.0	8.8	7.0	2.0	7.4	7.2
1920	With State Aid	3.1	10.5	5.6	3.4	6.8	5.5
	Without Aid	—	8.1	6.9	1.5	3.3	6.2

As far as per cent of total units is concerned it is seen that in 1922 states not giving aid had 7.2 per cent of its rural school units consolidated and the states giving aid had only 6.6. This difference is small, and probably no dependence can be placed on it except in so far as it indicates a corroborative tendency of such differences in the evidence of the first part of this chapter.

The sixth indicator of the amount of consolidation being effected in states giving and not giving special aid to that end is the decrease in the number of one-room schools. It is an indirect measure but perhaps consolidation is the greatest single factor causing that decrease. It might be pointed out that some

of the decrease is due to depopulation of some rural sections, but this is probably only a small factor and since it is likely going on in both states giving and not giving aid, its influence would not affect the comparison.

Table 13 shows the number of one-room schools in each state in 1918, 1920, and 1922. These data are from the U. S. Bureau of Education, Washington, D. C.

Table 14 summarizes these decreases in the total number of one-room schools in accordance with geographical divisions.

The raw percentages of decrease are given in the same table, that is, the total column is computed by dividing the total decrease in one-room schools over the entire United States by the total number of one-room schools. This lumps the whole United States into one experiment, the states giving aid being one area and the states not giving aid being another area. It will be seen from this table that by taking the United States as a whole there has been a greater decrease in one-room schools in the states that do not give aid than in those that do give aid, indicating a correspondingly greater amount of consolidation. It is doubtful whether any dependence can be placed on this fact, however, so the percentage of decrease for each state was computed. This divided the whole United States into 26 studies of decreases in one-room schools for states giving aid; in 22 studies for those states not giving aid. These percentages are given by states in Table 15 and by groups of states for certain years in Table 16.

It will be observed that the mean decrease from 1918-1922 for states giving aid is 9.10 per cent and for those states not giving aid the mean decrease is 14.34 per cent. The critical ratio was computed and found to be 1.9. This is not very significant and tends only to support the previous evidence that there is little reason to believe that the practice of giving state aid for consolidation is having any very considerable effect on the amount of consolidation effected.

OTHER FACTORS AFFECTING CONSOLIDATION

The next part of this chapter will deal with some other factors having some possible influence on consolidation. That they exist is well known. But if it can be shown that they exist in about

TABLE 13

NUMBER OF ONE-ROOM SCHOOLS

STATES	1918	1920	1922
EAST			
Maine	2,283	2,309	2,262
New Jersey	760	654	631
New York	7,800	8,639	8,602
Pennsylvania	9,846	10,254	8,889
Rhode Island	162	129	124
Connecticut	751	715	647
Massachusetts	801	787	755
New Hampshire	1,000	803	757
Vermont	1,250	1,190	1,148
SOUTH			
Delaware	331	296	274
Georgia	5,311	4,867	4,530
Louisiana	1,941	1,837	1,748
South Carolina	3,313	3,152	2,880
Tennessee	4,977	4,766	4,347
Texas	6,173	5,490	4,223
West Virginia	5,566	5,415	5,265
Alabama	3,561	3,839	3,777
Arkansas	5,120	5,215	3,800
Florida	1,978	1,770	1,359
Kentucky	7,205	6,500	6,294
Maryland	1,676	1,602	1,538
Mississippi	4,371	4,371	800
North Carolina	4,681	4,174	3,299
Virginia	4,128	3,786	3,630
GREAT LAKES			
Michigan	7,206	7,004	6,809
Ohio	8,326	6,904	5,961
Wisconsin	6,731	6,606	6,708
Illinois	11,000	10,145	9,986
Indiana	5,396	4,880	4,117
GREAT PLAINS			
Iowa	11,340	11,340	11,906
Minnesota	8,231	7,668	7,544
Missouri	9,000	8,066	9,281
Nebraska	6,638	6,284	6,435
North Dakota	4,200	4,372	4,482
Oklahoma	4,805	4,426	3,948
South Dakota	5,117	4,584	4,670
Kansas	7,730	7,624	7,413

TABLE 13 (*Continued*)

States	1918	1920	1922
WEST			
Idaho	1,096	1,102	1,061
Nevada	314	250	260
Oregon	1,950	2,280	1,768
Washington	1,761	1,747	1,726
California	2,374	2,366	2,021
Colorado	2,222	2,222	2,090
Arizona	337	205	273
Montana	2,793	3,079	3,014
New Mexico	748	748	692
Utah	138	137	125
Wyoming	1,000	1,289	1,200

TABLE 14

DECREASE IN TOTAL NUMBER OF ONE-ROOM SCHOOLS

Period	Status	East	South	Great Lakes	Great Plains	West	Total
1918–1922	With State Aid.	343	4,345	2,785	1,065	305	8,843
	Without Aid...	495	8,223	2,293	317	197	11,525
	Total.....	838	12,568	5,078	1,382	502	20,368
1918–1920	With State Aid.	+1,134	1,789	1,749	2,591	+259	4,736
	Without Aid...	307	1,463	1,371	106	+494	2,753
	Total.....	+ 827	3,252	3,120	2,697	+753	7,489
1920–1922	With State Aid.	1,477	2,556	1,036	+1,526	564	4,107
	Without Aid...	188	6,760	922	211	691	8,772
	Total.....	1,665	9,316	1,958	+1,315	1,255	12,879

PER CENT DECREASE IN ONE-ROOM SCHOOLS

Period	Status	East	South	Great Lakes	Great Plains	West	Total
1918–1922	With State Aid.	1.65	15.74	12.51	2.16	5.96	7.07
	Without Aid...	13.02	25.14	13.99	4.11	2.05	16.41
1918–1920	With State Aid.	+5.43	6.48	7.86	5.26	+5.05	3.79
	Without Aid...	8.08	4.48	8.37	1.38	+5.13	3.92
1920–1922	With State Aid.	6.72	9.90	5.06	+3.26	10.49	3.41
	Without Aid...	5,38	21.63	6.14	2.77	6.84	13.00

Plus signs indicate that there was an increase in one-room rural schools during the period stated.

TABLE 15

INCREASES AND DECREASES IN ONE-ROOM SCHOOLS

STATES	PER CENT INCREASE OR DECREASE 1918–1920	PER CENT INCREASE OR DECREASE 1920–1922	PER CENT INCREASE OR DECREASE 1918–1922
EAST			
Maine	1.1	— 2.0	— .9
New Jersey	—14.0	— 3.5	—16.9
New York	10.7	— .4	10.3
Pennsylvania	4.1	—13.3	— 9.7
Rhode Island	—20.4	— 3.9	—23.5
Connecticut	— 4.8	— 9.5	—13.8
Massachusetts	— 1.7	— 4.0	— 5.7
New Hampshire	—19.7	— 5.7	—24.3
Vermont	— 4.8	— 3.5	— 8.1
SOUTH			
Delaware	—10.6	— 7.4	—17.2
Georgia	— 8.4	— 6.8	—14.7
Louisiana	— 5.4	— 4.2	—19.9
South Carolina	— 4.9	— 8.6	—13.0
Tennessee	— 4.2	— 8.7	—12.6
Texas	—11.1	—23.0	—31.5
West Virginia	— 2.7	— 2.7	— 5.4
Alabama	7.8	— 2.9	6.0
Arkansas	1.9	—27.1	—25.8
Florida	—10.5	—23.2	—31.3
Kentucky	— 8.4	— 3.2	—12.6
Maryland	— 4.4	— 4.3	— 8.2
Mississippi	...	—81.7	—81.7
North Carolina	—10.8	—20.9	—29.5
Virginia	— 8.3	— 4.1	—12.0
GREAT LAKES			
Michigan	— 2.8	— 2.7	— 5.5
Ohio	—17.0	—13.6	—20.8
Wisconsin	— 1.9	— 1.5	— .3
Illinois	— 7.8	— 1.4	— 9.2
Indiana	— 9.6	—15.6	—23.7
GREAT PLAINS			
Iowa	...	5.0	5.0
Minnesota	— 6.8	— 1.6	— 8.3
Missouri	—11.0	15.0	3.1
Nebraska	— 5.3	2.4	— 3.0
North Dakota	4.0	2.5	6.2
Oklahoma	— 7.9	—10.7	—17.8
South Dakota	—10.4	1.8	— 8.7
Kansas	— 1.4	— 2.7	— 4.1

TABLE 15 (*Continued*)

States	Per Cent Increase or Decrease 1918–1920	Per Cent Increase or Decrease 1920–1922	Per Cent Increase or Decrease 1918–1922
West			
Idaho	.6	— 3.6	— 3.1
Nevada	—20.4	— .4	—17.2
Oregon	16.9	—22.4	— 9.3
Washington	— .8	— 1.2	— 1.9
California	— .3	—14.5	—14.8
Colorado	...	— 5.8	— 5.9
Arizona	—21.4	— .3	—18.7
Montana	10.2	— 2.1	7.8
New Mexico ...	...	— 7.4	— 7.4
Utah	— .7	— 8.7	— 7.4
Wyoming	28.9	— 6.9	16.6

equal quantity or extent or degree in the states that give aid to consolidation and the states that do not give aid to consolidation, the effect would be a sort of balance which would tend to eliminate their influence on the difference in amount of consoli-

TABLE 16

Average Per Cent Decrease in One-Room Schools

Period	Status	East	South	Great Lakes	Great Plains	West	Total
1918–1922	With State Aid.	8.14	16.33	8.87	3.36	7.88	9.10
	Without Aid...	13.00	24.39	16.45	4.10	4.54	14.35
1918–1920	With State Aid.	3.70	6.76	7.23	6.23	.93	5.14
	Without Aid...	7.75	4.67	8.70	1.40	3.34	3.43
1920–1922	With State Aid.	4.62	8.77	5.93	.63	6.90	5.17
	Without Aid...	5.70	20.93	8.50	2.70	6.61	11.61

dation. Among these the following will be considered: (1) Per cent of states having educational surveys and campaigns; (2) per cent of states having district unit of school organization and administrations, (3) average ability of states to support education, (4) mean number of square miles of territory to each mile of surfaced rural roads, (5) average number of miles of rural

surfaced road per one-room school, and (6) date of passage of laws giving aid to consolidation.

Tables 17 and 19 show that during the period 1913-1923, 46.2 per cent of the states giving aid to consolidation had state surveys and campaigns while 68.1 per cent of those states not giving aid to consolidation had educational surveys and campaigns. Thus it seems that those states that did not give special subsidies for consolidation relied more upon surveys and campaigns to stimulate consolidation. That would be a possible explanation of why they are progressing at a rate that is comparable with other states.

TABLE 17

PER CENT OF STATES HAVING EDUCATIONAL SURVEYS AND CAMPAIGNS

PERIOD	STATUS	EAST	SOUTH	GREAT LAKES	GREAT PLAINS	WEST	TOTAL
1913–1923	With State Aid.	20.0	71.4	33.3	57.1	25.0	46.2
	Without Aid...	50.0	87.5	100.0	00.0	57.1	68.1

It has been suggested that the type of unit of school organization and administration might influence the progress of consolidation. Table 18 shows that 53.8 per cent of those states giving aid to consolidation have the district unit of organization while 36.3 per cent of those states not giving aid to consolidation have the district unit. The district unit would ordinarily be considered as an obstacle to consolidation but since we are defining a consolidated school as any combination of two or more dis-

TABLE 18

PER CENT OF STATES HAVING DISTRICT UNIT OF SCHOOL ORGANIZATION AND ADMINISTRATION

PERIOD	STATUS	EAST	SOUTH	GREAT LAKES	GREAT PLAINS	WEST	TOTAL
1913–1923	With State Aid.	20.0	42.86	33.3	85.7	75.0	53.8
	Without Aid...	00.0	12.50	50.0	100.0	71.4	36.3

tricts into a school unit of two rooms or more it is quite likely that more small consolidations could take place in a state with the district unit than one with a larger unit.

The ability of the various states to support education might

be considered as an influencing factor in consolidation. Some will say that a state with high ability can have consolidation easier and others say that states with low ability are not hampered. Be that as it may, Table 20 shows that the average ability of the states that give aid to be .98 and the average ability of those that do not give aid to be .86. These data are taken from *Ability of States to Support Education* by John Kelly Norton. Using Clark's formula corrected for sparsity of population, the first group shows an ability of 1.07 and the latter shows .97. The critical ratios for these measures were computed and each was found to be less than 1 and therefore not significant.

It is a well-known fact that poor roads hinder transportation and hence consolidation. A study was therefore made of the relative amount of surfaced roads in both groups of states. Two units of measure were used for this item: (1) average number of square miles of territory to each linear mile of surfaced rural roads; (2) average number of miles of surfaced road per one-room school. Table 21 gives the data for each state for both measures. The average territory served by each mile of surfaced road for those states giving aid is 36 square miles and for those not giving aid, 45 square miles. This would seem to indicate that the states giving aid were favored by better roads, but when the critical ratio was computed it was found to be only .6 and therefore of almost no significance.

The average number of miles of surfaced road per one-room rural school for 1922 for states giving aid, exclusive of the state of Rhode Island, was 3.4 and for those not giving aid, 6.5. The critical ratio is 2.4, therefore no dependence can be placed on the claim that those states not giving aid for consolidation are just as well supplied with surfaced roads as those giving aid.

It could be suggested that the laws giving special aid to consolidation have not been in effect long enough to prove their worth. Table 19 shows the year in which each state passed its special aid laws. It is computed from this table that of the twenty-six states having adopted the policy of direct state aid for consolidation 46.15 per cent have granted aid since 1914 and 88.4 per cent of these states began aid since 1910. Thus this argument is at once invalidated.

TABLE 19

DATES OF LAWS GIVING STATE AID TO CONSOLIDATION, EDUCATION, SURVEYS AND CAMPAIGNS, AND UNIT OF SCHOOL ORGANIZATION

STATES	DATE OF POLICY OF DIRECT STATE AID	EDUCATIONAL SURVEYS AND CAMPAIGNS	UNIT OF SCHOOL ORGANIZATION AND ADMINISTRATION
Maine	1921		T
New Jersey			T
New York	1913	S 1922	D
Pennsylvania	1919		C
Rhode Island			1904 T
Connecticut			1909 T
Massachusetts		S 1919	Co. T
New Hampshire			T
Vermont		S 1914	T
Delaware	1914	S 1919	S 1919 C
Georgia	1919		C
Louisiana	1914	C	C
South Carolina	1912	C	Co. D
Tennessee	1913		1904 C
Texas	1921	S 1914 C	Co. D
West Virginia	1921	C	D
Alabama		S 1919 C	C
Arkansas		S 1921	D
Florida			1889 C
Kentucky		S 1921 C	1920 C
Maryland		S 1916	1906 C
Mississippi		C	C
North Carolina		S 1920 C	C
Virginia		S 1920 C	C
Michigan	1917		T
Ohio	1919	S 1914 C	T
Wisconsin	1915		D
Illinois		S 1917	D
Indiana		S 1922 C	T
Iowa	1913	C	Co. D
Minnesota	1911		D
Missouri	1913	C	D
Nebraska	1915		D
North Dakota	1911		T
Oklahoma	1911	S 1922 C	D
South Dakota	1919	S 1918 C	D
Kansas			Co. D
Idaho	1921		D
Nevada	1915		C

TABLE 19 (*Continued*)

States	Date of Policy of Direct State Aid	Educational Surveys and Campaigns	Unit of School Organization and Administration
Oregon	1919		D
Washington	1902	S 1914	D
California			D
Colorado		S 1917 C	D
Arizona		S 1918	Co. D
Montana			D
New Mexico		S 1916	1917 C
Utah			1915 C
Wyoming		S 1916	D

C = Campaign.
Co. = County.
S = Survey.
D = District.
T = Township.

TABLE 20

Average Ability of States to Support Education

(Unit Basis Corrected for Sparsity of Population)

Period	Status	East	South	Great Lakes	Great Plains	West	Total
1920(*a*)	With State Aid.	1.31	.63	1.14	.92	1.15	.98
	Without Aid...	1.26	.55	1.18	.96	.90	.86

Average Ability of States to Support Education

(Clark's Formula Corrected for Sparsity of Population)

Period	Status	East	South	Great Lakes	Great Plains	West	Total
1920(*b*)	With State Aid.	1.58	.51	1.31	.86	1.64	1.07
	Without Aid...	1.61	.44	1.39	.97	1.09	.97

TABLE 21

SURFACED RURAL ROADS IN STATES GIVING AND NOT GIVING STATE AID TO CONSOLIDATION

STATES	Ave. No. Sq. Mi. Territory to Each Mi. Surfaced Rural Road in 1919 for States Giving Aid to Consolidation	Ave. No. Mi. Surfaced Road per One-Room School 1922 for States Giving Aid to Consolidation	STATES	Ave. No. Sq. Mi. Territory to Each Surfaced Rural Road 1919 for States Not Giving Aid	Ave. No. Mi. Surfaced Road per One-Room School 1922 for States Not Giving Aid to Consolidation
EAST			EAST		
Maine	9.4	1.0	Connecticut		28.7
New Jersey .	1.4	4.7	Massachusetts .		18.4
New York ..	2.7	.8	New Hampshire	4.7	1.1
Pennsylvania	4.3	.2	Vermont	4.2	3.1
Rhode Island	1.7	52.1**			
SOUTH			SOUTH		
Delaware ...	7.6	1.6	Alabama	8.5	4.9
Georgia	4.5	32.9	Arkansas	26.7	4.1
Louisiana ...	18.0	4.0	Florida	15.0	2.0
So. Carolina.	8.2	3.4	Kentucky	2.9	.6
Tennessee ..	4.7	2.4	Maryland		4.2
Texas	21.6	.9	Mississippi	17.4	20.9
West Virginia	15.2	1.2	North Carolina.	8.5	2.2
			Virginia	6.9	.4
GREAT LAKES			GREAT LAKES		
Michigan ...	5.5	5.9	Illinois	4.4	3.6
Ohio	1.3	2.9	Indiana	1.2	2.8
Wisconsin ...	3.6	2.9			
GREAT PLAINS			GREAT PLAINS		
Iowa	37.4	.1	Kansas	53.0	.1
Minnesota ..	12.1	2.2			
Missouri ...	9.9	.1			
Nebraska ...	53.5	.6			
North Dakota	61.1	1.8			
Oklahoma ..	100.1	.2			
South Dakota	97.0	.5			
WEST			WEST		
Idaho	98.6	.3	California	12.2	1.5
Nevada	325.6**	4.7	Colorado	40.8	.8
Oregon	19.3	8.1	Arizona	239.9	.6
Washington .	11.0	2.7	Montana	163.3	.6
			New Mexico ...		10.8
			Utah		21.1
			Wyoming	163.2	9.4
Average	36.0	3.4	Average	45	6.5

** Not included in average because of unusual conditions.

Mileage data from *Public Roads*, Vol. 2, No. 15. U. S. Dept. of Agriculture.

CONCLUSION

In conclusion, the amount of consolidation effected in states giving special aid to it and in those that do not has been studied from six different angles. From no point of view could a significant difference be detected. Six other factors likely to influence the amount of consolidation were also studied. In no case was there found a difference in conditions in the two groups of states which could be called significant. Therefore since these disturbing factors are common to both groups, they tend to balance in effect and eliminate themselves as disturbing influences.

Regardless of all these investigations, the question might be asked—After all, is not the most important factor in stimulating consolidation concerned with how much special aid rather than simply special aid? The problem of this study, however, is not to determine how much state aid is necessary to have any stimulating influence but what success states have had in using it as a stimulant. Whether it has failed to be more effective because of parsimonious awards or because of legal difficulties in the operation of consolidation laws or because of some of the factors studied above or for any other reasons, the stimulating influence of special state aid on consolidation has been too feeble to cause any additional acceleration in consolidation in those states giving aid. From this study then, which has been limited to the use of all available data, it appears that special subsidy has had no greater effect as a device for use by states in advancing consolidation than those which other states may have used, if anything, in advancing the same purpose.

CHAPTER IV

EFFECT OF SPECIAL SUBSIDIES ON TRANSPORTATION

The approach to the study of the effect of special subsidies on the transportation of school children may be made from two standpoints: (1) a comparison of general transportation conditions (including city and rural schools) in the states which subsidize transportation and in those which do not; (2) a comparison of restricted transportation conditions (including only rural consolidated schools) in the states which give aid and in those which do not give aid to transportation.

The results of the first comparison need not necessarily be identical with those obtained in the second, for the provision of transportation in cities is not such an important factor as the provision of transportation for rural school children. Since transportation is one of the most important single factors in establishing and maintaining consolidated schools, the second comparison should be particularly vital.

Before proceeding upon the actual comparisons in regard to transportation it is desirable to throw some light on the more general conditions in each state. Thus a comparison has been made between the group of states giving aid to transportation and the group of states not giving aid, based upon (1) ability to support education; (2) total population per square mile; (3) rural population per square mile; (4) mileage of rural surfaced roads per 1,000 square miles of area; (5) average enrollment in rural schools, including one-room and consolidated schools (1920).

In 1922 twenty-one states were giving aid to transportation and twenty-seven were not. Table 22 shows the comparisons between the two groups of states.

From Table 22 it is evident that the mean relative ability to support education in those states giving aid to transportation is 1.07, and the mean of those which do not subsidize transportation

is .81. Since the critical ratio is 6.38, it is possible to conclude with practical certainty that such a difference is significant.

The average population per square mile for total population and the average population per square mile for rural population in the states giving aid is 121.3 and 34.5, respectively. In states

TABLE 22

States Giving Aid to Transportation

States	Relative Ability to Support Education	Population per Sq. Mi., 1920	Rural Population per Sq. Mi.	Mileage of Rural Surfaced Roads per 1,000 Sq. Mi.	Average Enrollment in Rural Schools Including One-Room and Consolidated Schools
EAST					
Connecticut	1.36	286.4	92.2	444.31	104.2
Maine	1.04	25.7	15.7	89.38	34.8
Massachusetts	1.49	479.2	24.9	795.43	44.9
New Hampshire	1.20	49.1	18.1	181.14	31.8
New Jersey	1.35	420.0	90.7	785.38	158.8
New York	1.65	217.9	37.7	377.33	33.5
Pennsylvania	1.15	194.5	69.4	308.49	59.0
Rhode Island	1.37	566.4	14.2	580.13	19.5
Vermont	.97	38.6	26.6	370.66	36.8
SOUTH					
Delaware	1.15	113.5	52.0	189.03	64.0
Texas	.66	17.8	12.0	55.97	113.0
South Carolina	.38	55.2	45.5	222.92	97.9
Tennessee	.49	56.1	41.5	235.07	73.0
GREAT LAKES					
Indiana	1.02	81.3	40.2	1096.36	48.0
Michigan	1.20	63.8	24.8	296.41	39.6
Wisconsin	.99	47.6	25.0	351.62	40.3
Ohio	1.22	141.4	51.2	878.85	52.2
GREAT PLAINS					
Kansas	.96	21.6	14.1	199.63	31.9
Minnesota	1.05	29.5	16.5	6.40	35.2
Nebraska	.98	16.9	11.6		29.5
WEST					
Wyoming	.86	2.0	1.4	4.50	19.7
Mean	1.073	121.26	34.5	373.45	55.6
Standard Deviation	.302	175.11	24.6	298.29	34.67

TABLE 22 (*Continued*)

STATES NOT GIVING AID TO TRANSPORTATION

STATES	RELATIVE ABILITY TO SUPPORT EDUCATION	POPULATION PER SQ. MI., 1920	RURAL POPULATION PER SQ. MI.	MILEAGE OF RURAL SURFACED ROADS PER 1,000 SQ. MI.	AVERAGE ENROLLMENT IN RURAL SCHOOLS INCLUDING ONE-ROOM AND CONSOLIDATED SCHOOLS
SOUTH					
Alabama	.36	45.8	35.9	200.39	97.9
Arkansas	.40	33.4	27.9	772.58	59.4
Florida	.66	17.7	11.2	109.74	67.6
Georgia	.40	49.3	36.9	309.44	86.0
Kentucky	.50	60.1	44.4	380.21	52.9
Louisiana	.55	39.6	25.8	57.13	75.7
Maryland	1.12	145.8	58.3	297.15	62.9
Mississippi	.33	38.6	33.4	122.56	69.2
North Carolina	.45	52.5	42.4	319.59	163.3
Virginia	.58	57.4	40.6	170.31	86.5
West Virginia	.77	60.9	45.6	56.56	41.7
GREAT LAKES					
Illinois	1.33	115.7		202.47	40.6
GREAT PLAINS					
Iowa	1.14	43.2	37.1	46.04	26.5
Missouri	.96	49.5	27.5	113.50	46.6
North Dakota	.71	9.2	26.4	10.02	26.7
Oklahoma	.61	29.2	7.9	35.13	73.1
South Dakota	.98	8.3	21.4	7.06	23.9
WEST					
Arizona	.76	2.9	1.9	10.82	119.5
California	1.91	22.0	7.0	90.18	76.0
Colorado	1.13	9.1	4.7	44.23	42.9
Idaho	.62	5.2	3.8	34.36	62.0
Montana	.68	3.8	2.6	12.05	23.2
Nevada	1.33	.7	.5	1.52	34.3
New Mexico	.41	2.9	2.4	14.69	79.6
Oregon	1.35	8.2	4.1	83.25	33.3
Utah	.54	5.5	2.9	29.93	43.9
Washington	1.31	20.3	9.1	174.49	59.8
Mean	.8107	34.70	21.06	111.31	62.04
Standard Deviation	.391	33.88	17.07	102.66	30.96
Critical Ratio	6.38	3.31	3.17	5.59	.99

not giving aid, the average population per square mile is 34.7 and the average rural population per square mile is 21.1. The critical ratio in the case of the total population per square mile is 3.31 and for rural population per square mile it is 3.7. This shows that there is a significant difference between the two groups of states in density of total population and rural population.

The average mileage of rural surfaced roads per 1,000 square miles of area in the states giving aid is 373.45 and in the case of the states not giving aid, 111.31. The critical ratio is 5.59. Thus there is a significant difference in the condition of rural roads. Such a difference is in favor of the states giving aid and should considerably facilitate the transportation of school children, other things being equal.

Since there is a sparser population in the states which do not give aid to transportation and a poorer condition of rural roads, then the need for transportation is greater in these states provided there are approximately the same number of children per rural school in each of the two groups. The average number of children per rural school in the case of the states giving aid is 56.6 and for the states not giving aid, 62.0, with a critical ratio of .99. Thus, since there is not a significant difference in the enrollment per school, it is obvious that the school population in the states not giving aid must be recruited from a larger area than in the states giving aid. Then the distance over which the children are transported is greater and the condition of the roads is inferior, both of which when combined with a smaller ability to support education make the transportation need much greater in the states which do not subsidize the transportation of school children.

Part I

Comparisons of Transportation Between the States Which Give Aid and Those Not Giving Aid

Remembering that there are differences between the two groups of states in wealth, rural roads, and density of population in favor of the states giving aid, an analysis is made at this point in the study of the transportation of school children in the various states. The units of comparison chosen are as follows:

1. Per cent of school children transported (*i.e.*, per cent that total number of children transported is of total average daily attendances).
2. Transportation cost per pupil (1920 and 1922).
3. Per cent that transportation cost is of current expenditure (1920-1922).
4. Per cent increase in expenditure for transportation for the years 1920-1922.
5. Per cent increase in the number of children transported for the years 1920-1922.

Table 23 shows the comparison of the two groups of states on the above items.

If the two groups of states transport the same per cent of pupils at approximately the same cost, then it might be expected that if state aid is a stimulant of transportation there would be a greater per cent increase in the number of children transported over a period of years and also a greater per cent increase in expenditure for transportation. Data are available in complete form only for the years 1920 and 1922. An investigation was made at the United States Bureau of Education for additional unpublished data prior to 1920 and subsequent to 1922 but the Bureau was not in possession of these data. It is impossible to reach any definite conclusion as to the trend over a two-year period, yet these are the best and most complete data from which conclusions may be drawn at the present time. The mean per cent increase in the number of children transported in the states giving aid is 43.84 and for the states not giving aid, 70.82. The critical ratio is 1.91. The mean per cent increase in expenditure for transportation for the states giving aid is 65.0 and for the states not giving aid, 106.0, with a critical ratio of 1.65. While these differences are not significant the chances are about 4 to 1 and about 2.7 to 1 that there has been in the states that do not give aid a larger increase in expenditure for transportation as well as in the number of pupils transported. This seems to suggest that state aid does not appear to be an extraordinary stimulant in producing greater effort on the part of those communities receiving aid, to meet their transportation obligations.

If state aid is effective in stimulating transportation then it might be expected that a greater per cent of school children

TABLE 23

COMPARISONS OF TRANSPORTATION BETWEEN STATES WHICH GIVE AID AND THOSE NOT GIVING AID

STATES GIVING AID

STATES GIVING AID	PER CENT THAT TRANSPORTATION OF CHILDREN IS TO A.D.A. 1920	TRANSPORTATION COST PER PUPIL		PER CENT TRANSPORTATION COST IS OF CURRENT EXPENSE		PER CENT INCREASE IN EXPENDITURE FOR TRANSPORTATION 1920–1922	PER CENT INCREASE IN NUMBER OF CHILDREN TRANSPORTED 1920–1922	AVERAGE TRANSPORTATION COST PER PUPIL A.D.A.
		1920	1922	1920	1922			
EAST								
Connecticut	2.9	1.53	1.78	2.3	2.2	32.6		1.66
Maine	7.7	2.55	2.83	5.1	4.6	21.2	3.72	2.69
Massachusetts	5.0	1.65	1.96	2.3	2.2	32.3	4.11	1.81
New Hampshire		3.66	4.76	5.5	6.0	41.6		4.21
New Jersey	4.6	1.57	2.08	2.3	2.2	42.9	68.20	1.83
New York		.34	.44	.5	.4	42.5		.39
Pennsylvania	.5	.21	.40	.4	.6	112.3		.31
Rhode Island		.44	.56	.7	.8	49.4		.50
Vermont	8.9	4.55	4.62	6.6	.6	12.9	25.61	4.59
SOUTH								
Delaware	5.2	2.61	1.99	4.7	2.6	—16.6	74.46	2.30
Texas	.4	.09	.27	.3	.6	265.0	166.12	.18
South Carolina	.5	.07	.20	.5	.9	174.0		.14
Tennessee	1.3	.19	.38	1.0	1.4	93.8	42.52	.29
MID-WEST								
Indiana	13.7	4.19	5.35	6.7	5.3	38.9	46.50	4.77
GREAT LAKES								
Michigan	.3	.29	.56	.4	.6	10.30		.43
Wisconsin		.61	1.01	1.0	1.3	47.3		.81
Ohio		2.04	2.54	3.0	2.9	47.8		2.29
GREAT PLAINS								
Kansas		2.0		3.4	3.3			
Minnesota	5.2	2.47	3.06	3.4	3.5	39.8	22.25	2.77
Nebraska	1.5			.7			28.80	
WEST								
Wyoming		2.22	2.85	2.4	2.6	43.6		2.54
Mean	3.93					65.0	43.84	1.82
Standard Deviation	3.74					63.1	45.35	2.35

TABLE 23 (*Continued*)

COMPARISONS OF TRANSPORTATION BETWEEN STATES WHICH GIVE AID AND THOSE NOT GIVING AID

STATES NOT GIVING AID

STATES NOT GIVING AID	PER CENT THAT TRANSPORTATION OF CHILDREN IS TO A.D.A. 1920	TRANSPORTATION COST PER PUPIL		PER CENT TRANSPORTATION COST IS OF CURRENT EXPENSE		PER CENT INCREASE IN EXPENDITURE FOR TRANSPORTATION 1920–1922	PER CENT INCREASE IN NUMBER OF CHILDREN TRANSPORTED 1920–1922	AVERAGE TRANSPORTATION COST PER PUPIL A.D.A.
		1920	1922	1920	1922			
SOUTH								
Alabama	2.5	.60	.65	2.9	2.7	28.3	38.40	.63
Arkansas	.3							
Florida	4.8	1.30	1.35	3.9	2.9	12.8	17.50	1.33
Georgia	2.0	.14	.40	.8	1.8	205.6	138.72	.27
Kentucky ...		.27	.37	1.3	1.3	67.8		.32
Louisiana ...	7.1	1.83	2.30	5.3	5.2	43.8	78.26	2.07
Maryland ...		.36	.46	.8	.7	39.0		.41
Mississippi ..	13.5	.94	2.15	5.6	9.5	239.4	25.84	1.55
North Carolina ...	1.8	.23	.52	1.1	1.7	158.2	156.54	.38
Virginia	2.5	.43	.62	1.5	1.6	61.1		.53
West Virginia		.73	.87	1.9	1.6	34.5		.80
GREAT LAKES								
Illinois		.17	.25	.3	.3	64.4		.21
Iowa	8.6	3.33	4.64	4.3	5.0	49.6	2.50	3.99
GREAT PLAINS								
Missouri		.09	.11	.2	.2	28.7		.10
North Dakota	16.5	6.82	6.46	8.2	7.5	18.2	20.88	6.64
Oklahoma ...	2.4	.64	.72	1.3	1.1	36.3	133.05	.68
South Dakota	2.4	2.14	2.11	2.5	2.3	27.6	106.70	2.13
WEST								
Arizona		.62	1.03	.6	.9	82.0		.83
California ...		1.31	1.52	1.6	1.4	42.3		1.42
Colorado	7.6							
Idaho	1.8	3.56	3.09	4.9	3.5	3.8		3.33
Montana	3.6	3.24	4.40	3.1	3.8	45.9	60.64	3.82
Nevada		3.21	3.41	2.9	2.6	16.5		3.31
New Mexico.	8.6	2.30	3.91	4.0	5.0	59.4		3.10
Oregon	1.5	.01	1.22	.03	1.5	756.4		.62
Utah	5.1	1.74	1.10	2.8	2.9	33.2		1.42
Washington .	.9	.30	3.48	.3	3.5	502.7		1.89
Mean	4.92					106.0	70.82	1.67
Standard Deviation ...	4.29					169.5	52.53	1.55
Critical Ratio	1.07					1.65	1.91	.21

would be transported in the states giving aid as opposed to those which do not. However, the mean per cent of pupils transported in the states which give aid is 3.93 and in the states not giving aid, 4.92. The critical ratio is 1.07. Thus, in spite of the fact that the states not giving aid are poorer and must transport their pupils a greater distance there is no significant difference in the per cent of pupils transported. Those states which do not give aid in spite of the handicaps of distance, less ability to support education, and no subsidy for transportation are accomplishing as much as the states which give aid for transportation. Thus the effect of state aid as a stimulant of transportation appears to be no better than other means of stimulating progress used in other states.

Examining the per-pupil cost of transportation and the per cent that transportation cost is of current expenditure, the average cost per pupil in the states giving aid is 1.82 and in the states not giving aid, 1.67, with a critical ratio of .21, and the average per cent that the transportation cost is of the current expenditure in the states which give aid is 2.38 and for the states not giving aid, 2.56, with a critical ratio of .43. From these data it would seem that the states which do not give aid are able to transport the same per cent of pupils greater distances at approximately the same cost as the states giving aid. This may be due in part to the fact that living costs might be less in the poorer states, which would result in lower salaries and lower costs for material or it might be due to a wiser apportioning of school funds.

CONCLUSIONS

I. Inasmuch as there is no significant difference in the per cent of school children transported among the states giving aid to transportation and those which do not—notwithstanding the fact that in the latter instance there are poorer roads, greater distances, and less wealth—it appears that special subsidy has had no greater effect as a stimulant in meeting transportation needs than that which may have been used by other states in stimulating the same purpose.

II. The per-pupil cost of transportation is practically equivalent for the states which give aid and for those which do not.

III. There is apparently no greater per cent increase in expen-

diture for transportation and no greater per cent increase in the number of pupils transported in the states that give aid over against the states that do not give aid. The tendency is actually in the opposite direction, although there is not a significant difference.

Part II

Comparisons of transportation in 260 consolidated schools between states giving aid and states not giving aid

As a check on the preceding study and in order to avoid the heterogeneity of data employed in regard to city and rural schools, this analysis is based upon data embodied in the bulletin *A Study of 260 School Consolidations*, issued by the United States Bureau of Education and reported by J. F. Abel. In this analysis the following comparisons are utilized:

1. Per cent that elementary school is of total enrollment.
2. Area served by consolidations in square miles.
3. Average distance one way over which pupils are transported.
4. Per cent of pupils transported.
5. Average transportation cost per child per mile per day.
6. Per-pupil cost of transportation per year.
7. Per cent that transportation cost is of school income.

Since one of the most important functions of consolidated schools is the transportation of pupils such a comparison as outlined above should prove instructive. The consolidated schools reported by Abel represent in many cases elementary and high schools combined. It is desirable to make a comparison of elementary school pupils alone if possible since these schools are affected relatively to the same extent by compulsory attendance laws in the several states. High school attendance will depend primarily upon the attitude of the communities in question. However, since the data reported by Abel make no distinction between the transportation of elementary and high school pupils it is necessary to find whether or not a difference exists within the two groups of schools in the proportion that the elementary school enrollment bears to the total school enrollment. If no difference is found, the variable factor introduced by the inclusion of high school students can be considered constant so far as this comparison is concerned.

TABLE 24

TRANSPORTATION IN 260 CONSOLIDATED SCHOOLS IN STATES GIVING AID

STATES	1 % THAT ELEMENTARY SCHOOL PUPILS ARE OF TOTAL ENROLLMENT	2 AREA SERVED BY CONSOLIDATION IN SQ. MI.	3 AVERAGE DISTANCE ONE WAY OVER WHICH PUPILS ARE TRANSPORTED	4 % OF PUPILS TRANSPORTED	5 AVERAGE TRANSPORTATION COST PER CHILD PER MILE PER DAY	6 PER-PUPIL COST OF TRANSPORTATION PER YEAR	7 % THAT TRANSPORTATION COST IS OF SCHOOL INCOME
EAST							
Connecticut	73.7%	17.3%	3.2%	39.9%	4.1%	40.8%	11.1%
Maine	75.7	22.8	3.2	28.8	11.1	41.1	22.1
Massachusetts	87.1	17.6	2.5	43.6	10.2	43.9	23.9
New Hampshire	89.2	10.0	2.7	34.6	7.1	55.7	18.0
New Jersey	76.1	12.0	3.4	32.1	13.0	65.4	7.1
New York	74.3	111.0	3.1	34.2	10.0	47.1	8.3
Pennsylvania	70.3	10.0	3.3	51.5	3.0	30.5	15.7
Rhode Island	100.0	6.0	2.0	46.9	7.0	51.7	0
Vermont	48.2	25.0	2.5	21.2	10.0	33.6	6.7
SOUTH							
Delaware	73.6	34.0	7.7	24.3	1.5	36.4	7.9
Texas	71.6	22.5	4.5	58.5	1.0	8.0	11.2
South Carolina	85.6	29.0	4.0	45.9	1.5	10.0	11.6
Tennessee	87.5	74.7	4.0	50.6	2.7	15.2	31.6
MIDDLE WEST							
Indiana	56.5	36.7	4.6	44.0	5.0	41.2	11.6
Michigan	71.6	22.3	4.7	57.0	3.7	30.0	17.3
Wisconsin	80.5	60.3	3.3	46.6	5.0	35.3	18.6
Ohio	70.0	30.1	3.9	71.9	2.6	24.6	18.1
Kansas	78.0	80.2	10.0	49.3	6.0	43.0	19.8
Minnesota	71.8	26.8	4.5	47.9	8.6	36.1	16.8
Nebraska	75.0	42.7	4.9	47.2	9.5	34.6	18.2
WEST							
Wyoming	87.9	140.0	5.2	63.7	3.0	50.3	30.7
Mean	76.06	39.57	4.15	44.75	6.0	36.88	16.32
Standard Deviation	13.13	34.23	1.78	12.32	3.54	13.03	6.94

TABLE 25

TRANSPORTATION IN 260 CONSOLIDATED SCHOOLS IN STATES NOT GIVING AID

STATES	1 % THAT ELEMENTARY SCHOOL PUPILS ARE OF TOTAL ENROLLMENT	2 AREA SERVED BY CONSOLIDATION IN SQ. MI.	3 AVERAGE DISTANCE ONE WAY OVER WHICH PUPILS ARE TRANSPORTED	4 % OF PUPILS TRANSPORTED	5 AVERAGE TRANSPORTATION COST PER CHILD PER MILE PER DAY	6 PER-PUPIL COST OF TRANSPORTATION PER YEAR	7 % THAT TRANSPORTATION COST IS OF SCHOOL INCOME
SOUTH							
Alabama	73.3%	82.6%	6.4%	56.3%	3.4%	21.2%	29.5%
Arkansas	0	0	0	0	0	0	0
Florida	85.5	120.0	3.0	79.8	2.3	8.7	12.8
Georgia	76.0	34.5	5.3	42.3	6.3	11.0	12.9
Kentucky	85.5	48.7	3.7	68.2	5.7	17.1	38.1
Louisiana	54.7	101.2	6.0	68.6	4.5	17.3	18.5
Maryland	70.5	56.5	5.3	36.9	4.4	39.9	14.4
Mississippi	85.4	31.	6.0	42.2	20.0	31.7	22.8
North Carolina	81.6	56.4	5.6	47.1	2.5	6.6	7.5
Virginia	64.4	70.2	6.0	34.5	5.9	31.1	14.7
West Virginia	87.0	26.5	6.0	25.0	2.6	10.7	0.3
MIDDLE WEST							
Iowa	69.0	33.7	5.4	50.3	3.7	37.1	14.9
Missouri	0	0	0	0	0	0	0
North Dakota	74.0	37.0	5.1	55.6	16.1	54.1	21.7
Oklahoma	81.6	41.0	4.7	35.6	7.5	26.0	19.1
South Dakota	71.0	38.3	4.1	20.7	5.9	54.4	16.0
Illinois	82.7	28.4	3.7	51.7	6.7	48.8	21.5
WEST							
Arizona	0	140.0	8.5	49.8	1.5	49.7	27.9
California	15.4	621.4	7.8	32.3	3.8	46.1	9.5
Colorado	36.5	54.3	6.2	47.4	9.0	23.8	13.5
Idaho	62.2	103.8	3.7	30.2	12.8	28.0	6.1
Montana	78.6	127.4	5.5	42.7	5.3	52.6	9.8
Nevada	100.0	91.0	3.5	46.6	5.7	44.4	19.4
New Mexico	83.5	36.0	7.0	0	0	0	40.6
Oregon	87.9	12.0	5.0	88.5	.5	19.5	12.5
Utah	50.3	310.0	4.3	31.0	5.5	37.7	11.3
Washington	72.0	190.0	5.1	33.3	4.8	54.9	11.7
Mean	72.05	99.68	5.32	46.53	6.1	32.18	16.66
Standard Deviation	17.92	123.88	1.27	16.43	4.42	15.71	9.92
Critical Ratio	1.28	3.44	3.97	.61	.15	1.62	.20

The average per cent that the elementary school enrollment is of the total enrollment in the states which give aid is 76.1 and in the states not giving aid, 72.0. The critical ratio is 1.28. Since such a difference is not significant it is possible to consider the effect of high school students on transportation as a constant for the data employed.

The same general conditions in regard to wealth and density of population exist in this comparison as would be the case if each state were considered a unit. In the heterogeneous comparison, the assumption was made that because of the sparser population the area served by schools and the distance over which pupils are transported will be larger in the states not giving aid to transportation. The data reported by Abel make such a comparison possible. The average area served by consolidated schools in the states which give aid is 34.6 square miles and in the states not giving aid, 99.7 square miles. The critical ratio is 3.44. The average distance one way over which pupils are transported in the case of the states giving aid is 4.15 miles and in the states not giving aid, 5.32 miles. The critical ratio is 3.97. Thus there are significant differences in the area served by consolidated schools and in the distances over which pupils are transported.

It would seem that such differences as appear above would have an effect on the per cent of school children transported. However, the average per cent of pupils transported in the states giving aid is 44.8 and in the states not giving aid, 46.5, with a critical ratio of .61. As this difference is not significant, the conclusion can be drawn that the states not giving aid, in spite of the handicaps of less wealth and greater area and distance, actually transport equivalent percentage of their school children.

The next question is whether the greater distance over which pupils are transported leads to higher costs. A comparison is made of the average transportation cost per child per mile per day, and the per-pupil cost of transportation per year, and the per cent that the transportation cost is of the school income. The average cost per child per mile per day in the states giving aid is 6.0 cents and in the states not giving aid, 4.4 cents. The critical ratio is .15. The transportation cost per pupil per year in the states giving aid is $36.88 and in the states not giving aid, $32.18. The critical ratio is 1.62. The average per cent that the transportation cost is of the total school income is 16.32 in the

states giving aid and 16.66 for the states not giving aid. The critical ratio in this case is .20.

Thus there are no significant differences in the costs of transportation between the two groups of states. The states giving aid are achieving the same results in transportation and at the same cost as the states subsidizing transportation in spite of the handicaps of distance and less wealth.

CONCLUSIONS

(1) Consolidated schools in states not subsidizing transportation serve greater areas and transport pupils over greater distances than such schools in states giving aid.

(2) Both groups of states transport practically the same per cent of their enrollment for the consolidated schools in question.

(3) Consolidated schools in states not giving aid to transportation are making the same progress at the same cost in spite of the handicaps of distance and less wealth, as the consolidated schools in states subsidizing transportation.

General Conclusions

A study is made of transportation of school children from two points of view: (1) consideration of the general transportation conditions in the several states and (2) consideration of restricted transportation conditions in a sampling of consolidated schools in the several states. The results show in conclusion:

(1) That states not giving aid are achieving the same results in regard to transportation as those giving aid in spite of the handicaps of distance and less wealth, and a poorer condition of rural roads, and

(2) That the claim that state aid is a stimulant to the transportation of school children does not seem valid. In fact, the burden of proof lies on the part of those advocating state aid.

CHAPTER V

EFFECT OF SPECIAL SUBSIDIES ON HIGH SCHOOL LIBRARIES

One of the most important projects which facilitates the work of the children in public schools is the school library. Probably nothing at their disposal affects instruction to a higher degree than this single project. Accordingly, an attempt is made in this chapter, following the same procedure that was employed in the study of consolidation and transportation, to determine the influence of state aid upon school libraries. Because the greatest amount of reliable data concerned high school libraries, these data were selected for this study. The units used as measures of comparison between the groups of states giving aid and those not giving aid to libraries are the following:

1. Per cent increase in the number of volumes, 1912-1922.
2. Volumes per pupil in high schools, 1922.
3. Per cent increase in payments for libraries, 1918-1922.
4. Library payments per pupil in high schools, 1922.
5. Ratio that the number of libraries are to total number of schools, 1922.
6. Per cent increase in high school libraries, 1912-1922.
7. Ratio that the number of libraries are to the total number of high schools, 1922, and
8. Other units which might make a general differentiation between the states, such as index of non-salary costs and the ability to support education.

Tables 26 and 27 give the per cent increase in number of volumes for 1912-1922, in which the mean increase in the states giving aid is 79.31 and in the states not giving aid, 93.4. The critical ratio is 1.01. This is not significant but suggests that slightly more is being accomplished in the states which do not subsidize libraries than in the other group. Nevertheless, since the first factor of comparison gives equal weight to all the states,

TABLE 26

States Giving Aid to High School Libraries

States	% Increase in Number of Volumes 1912-22	Volumes per Pupil in High Schools 1922	Increase in Payments for Libraries 1918-20	Library Payments per Pupil in High Schools 1922	Per Cent Libraries Are to Total Schools 1922	Per Cent Increase in High School Libraries 1912–1922	Per Cent Libraries Are to Total Number High Schools 1922	Index to Non-Salary Costs	Ability to Support Education
EAST									
Connecticut	34.1	2.0	21.8	.87	4.6	9.8	85.9	.94	1.36
New Jersey	54.1	2.3	1.4	.60	6.1	95.0	87.4	1.56	1.35
New York	15.7	3.9	20.8	1.80	5.7	5.9	97.1	1.14	1.65
Rhode Island	22.0	2.0			4.2		100.0	.87	1.37
SOUTH									
Alabama	30.6	1.2	9.8	.42	2.3	20.8	83.0	.26	.36
Delaware	222.8	2.4	— 3.6	.14	5.0	40.0	95.5	.75	1.15
Maryland	43.6	2.9	— 38.9	.35	4.2	38.0	92.4	.76	1.12
North Carolina	95.8	2.7	— 24.2	.31	3.8	50.3	89.7	.43	.45
South Carolina ...	7.4	1.6	147.3		2.3	— 24.7	89.4	.24	.38
Tennessee	114.6	1.9	234.0	.44	2.9	48.1	90.0	.31	.49
Texas	133.6	3.0		1.64	4.2	16.4	94.5	.64	.66
Virginia	124.5	5.0	232.5	.67	5.6	33.7	97.1	.66	.58
West Virginia	221.1	5.7		3.19	2.4	96.5	96.5	.58	.77
GREAT LAKES									
Wisconsin	60.6	6.0	72.9	1.90	4.6	22.7	99.0	1.03	.99
GREAT PLAINS									
Iowa	70.9	3.3	57.3	.65	5.5	25.1	97.2	1.31	1.14
Minnesota	58.3	6.6	15.8	2.28	4.5	69.3	94.9	1.57	1.05
South Dakota	38.6	6.2		1.32	3.0	50.7	97.2	1.61	.98
Mean	79.31	3.45	57.24	1.105	4.17	37.35	93.34	.86	.93
Standard Deviation	63.5	1.72	87.66	.85	1.19	30.62	4.80	.44	.38

some account might be taken of the differences between the states in regard to the number of pupils attending school. The second unit of measure involves the number of volumes per pupil in the high schools in 1922. Here the mean of the states giving aid is 3.45 volumes per pupil, and in the states not giving aid, 3.65, with a critical ratio of .57. Such a difference as exists can be declared practically negligible. If state aid has a marked effect upon the formation and upkeep of libraries, it might be expected that there would be a difference in the increase of payments for libraries over a period of time. An analysis of this factor shows that the per cent increase for libraries for the period from 1918 to 1920 in the states giving aid is 57.24 and in the states not giving aid, 52.45. Although the average per cent increase is slightly larger in the first group of states, such an increase becomes negligible with a critical ratio of .24.

The next two factors, library payments per pupil in high school and the ratio that the number of libraries are to the total number of pupils, give rather surprising evidence as to what might be expected if state aid is effective for the total average library payment per pupil in the states giving aid is 1.105 and in the states not giving aid, 1.98. The critical ratio is 2.98 and the average ratio that the number of libraries are to the number of schools in the states giving aid is 4.17; in the states not giving aid, 5.35. The critical ratio here is 3.93. Thus it would seem that the states giving aid to libraries are not succeeding in providing adequate library facilities for high school pupils or in establishing an adequate number of libraries on the basis of the total number of schools.

Since approximately one-third of the states granting aid have adopted such a policy since 1910 and since most state aid has been directed toward the formation and maintenance of the high school libraries, it might be expected that there would be a larger percentage of increase from 1912 to 1922 in the number of high school libraries for the states giving aid. However, here the average per cent of increase in the states giving aid is 37.35, and in the states not giving aid, 53.9. The critical ratio is 1.93 which, though not significant, does suggest that where state aid has been given, either vigorous work preceding 1910 has gone forward or a state of complacency might have been reached after an initial agitation for this project has subsided. The ratio that the num-

TABLE 27

States Not Giving Aid to Libraries

States	% Increase in Number of Volumes 1912-22	Volumes per Pupil in High Schools 1922	Increase in Payments for Libraries 1918-20	Library Payments per Pupil in High Schools 1922	Per Cent Libraries Are to Number Schools 1922	Per Cent Increase in High School Libraries 1912–1922	Per Cent Libraries Are to Total Number High Schools 1922	Index to Non-Salary Costs	Ability to Support Education
EAST									
Maine	21.2	1.7			5.7	9.7	96.0	.70	1.04
Massachusetts	54.1	1.6	48.4	.15	8.2	18.3	86.9	.95	1.49
New Hampshire	74.4	3.1			6.2	16.7	87.5	.93	1.20
Pennsylvania	12.6	2.1			6.0	11.5	90.8	.88	1.15
Vermont	— 3.6	1.7	60.1		5.2	11.9	84.6	.75	.97
SOUTH									
Arkansas	124.1	2.1			2.7	55.8	89.8	.13	.40
Florida	161.4	2.6	97.3	.37	3.5	30.0	93.8	.76	.66
Georgia	47.2	1.9	44.2	.27	2.4	— 13.8	86.6	.19	.40
Kentucky	54.0	2.4		.07	3.0	93.4	90.4	.24	.50
Louisiana	102.6	2.7	152.2	1.58	4.0	50.0	96.6	.59	.55
Mississippi	26.1	2.1			2.2	2.9	89.9	.18	.33
GREAT LAKES									
Illinois	54.5	3.5	108.3	1.71	5.1	19.6	98.1	1.14	1.33
Indiana	41.0	4.3			10.0	5.7	96.1	1.90	1.02
Michigan	86.2	5.7	41.1	6.93	5.2	23.9	93.8	1.81	1.20
Ohio	49.9	3.6	24.6	.40	8.6	10.9	95.9	1.75	1.22
GREAT PLAINS									
Kansas	103.4	5.2			6.2	51.7	98.1	1.15	.96
Missouri	129.1	5.8	— 6.1	4.66	5.3	32.4	97.3	.74	.96
Nebraska	373.	3.1	12.2	1.10	5.6	28.2	96.0	1.50	.98
North Dakota	82.4	8.1		1.51	5.8	117.6	94.3	1.07	.71
Oklahoma	150.6	3.4	213.0		5.2	99.4	94.7	.79	.61

WEST									
Arizona	264.5	4.9	67.1	3.84	7.0	164.3	97.4	1.77	.76
California	143.9	2.6	55.0	4.30	5.2	27.9	94.0	2.09	1.91
Colorado	37.5	3.3		1.18	4.4	32.7	98.6	1.33	1.13
Idaho	73.3	3.8	94.4	2.20	6.4	98.2	97.4	1.18	.62
Montana	257.4	7.3	37.7	3.10	4.6	244.9	97.7	1.76	.68
Nevada	54.6	6.2	53.2	2.14	4.8	6.3	89.5	1.51	1.33
New Mexico	87.7	3.1		1.00	3.2	84.6	94.1	.92	.41
Oregon	158.5	5.0	—81.7	.59	7.6	104.8	96.8	1.18	1.35
Utah	203.3	1.6		.21	5.6	35.7	74.5	1.54	.54
Washington	118.3	5.0		3.60	8.1	42.9	98.5	1.54	1.31
Wyoming	87.4	3.7	—76.8	2.64	2.8	152.9	93.5	1.67	.86
Mean	93.38	3.65	52.45	1.98	5.35	53.90	93.2	1.10	.92
Standard Deviation	75.98	1.69	68.25	1.76	1.87	56.46	5.17	.53	.37
Critical Ratio	1.01	.57	.24	2.98	3.93	1.93	.14	2.44	.43

Data in last two columns from J. K. Norton's *Ability of States to Support Education.*

ber of libraries are to total number of high schools in 1922 seemed to bear out the latter point, however, for the average in the case of the states giving aid is 93.4 and in the states not giving aid it is 93.2, with a critical ratio of .14. While no dependence can be placed on this difference, it would tend to indicate that the two groups are equivalent in this respect regardless of the means employed to secure financial aid for libraries. Further evidence of this is offered if the index of non-salary costs is taken into consideration, for the mean of those states giving aid is .86 and of those not giving aid, 1.10. Here the critical ratio is 2.44. This is not a significant difference, though it is fairly indicative of the difference in the methods of financing this project.

That the two groups of states apparently do not differ fundamentally is shown if we take into consideration the ability of each group to support education. Here the mean ability of the states giving aid to support education is .93, and of the states not giving aid, .92. The critical ratio in this case is .43. While no dependence can be placed on this difference, it appears from this consideration that such differences or similarities as have appeared may be considered significant.

SUMMARY

All the evidence seems to point to the fact that state aid has had no greater effect as a device for encouraging the establishment of adequate library facilities than direct taxes or other means which may have been used by other states in establishing the same provision.

CHAPTER VI

EFFECT OF SPECIAL SUBSIDIES ON HIGH SCHOOL

One of the oldest and certainly the most popular of the educational projects subsidized by the states is that of high schools. This chapter reserves for its purpose the determination of the effect of special subsidies on high schools, particularly as it exists in comparison between two groups of states—those giving state aid and those not giving state aid. For the purpose of ascertaining whether differences exist between these two groups of states, the following units of comparison were chosen:

1. Per cent increase in high schools over a period extending from 1912-1922.
2. The per cent increase in high school enrollment over the same period.
3. Ratio that the number of high schools are to the total number of schools in each state.
4. The ability to support education.

If state subsidy of high schools is an important influence in the formation of new schools, it might be expected that over such a period of time as is covered by the years 1912-1922, there might be a difference between the per cent increase in high schools for the states giving aid and those not giving aid. The mean of those giving aid is 38.3 and of those not giving aid is 44.1. The critical ratio is .86. Thus it seems that state aid has not been noticeably influencing the tendency of the states to provide high school facilities. Since the first unit of comparison then shows no significant difference in an increase in the number of high schools, recourse is made to the possibility that the influence of state aid might be shown in the per cent increase in the number of high school students enrolled over the period 1912-1922, on the assumption that additional facilities may have been provided which would make possible a greater enrollment in the high schools of those states giving aid. In this case, the average per

TABLE 28

STATES GIVING AID TO HIGH SCHOOLS

STATES	PER CENT INCREASE IN 1912–1922 HIGH SCHOOLS	PER CENT INCREASE IN HIGH SCHOOL ENROLLMENT	PER CENT THAT HIGH SCHOOL IS TO TOTAL NUMBER OF SCHOOLS	ABILITY TO SUPPORT EDUCATION
EAST				
Connecticut	20.0	154.8	5.3	1.36
Maine	— 2.8	116.3	5.9	1.04
Massachusetts	17.9	75.2	9.5	1.44
New Jersey	2.0	137.3	6.9	1.35
New York	7.6	114.6	5.9	1.65
Pennsylvania	4.1	150.9	6.6	1.15
Rhode Island	— 8.7	56.4	4.2	1.37
Vermont	14.7	147.0	6.1	.97
SOUTH				
Alabama	10.3	310.6	2.8	.36
Arkansas	55.6	304.3	3.0	.40
Delaware	— 4.3	147.4	5.2	1.15
Georgia	—16.6	323.0	2.8	.40
Louisiana	50.0	340.8	5.1	.55
Maryland	37.2	131.2	4.5	1.12
North Carolina	36.4	221.2	4.2	.45
South Carolina	—27.6	234.4	2.6	.38
Tennessee	31.1	261.1	3.3	.49
Virginia	26.6	141.2	5.7	.58
West Virginia	92.2	328.5	2.4	.77
GREAT LAKES				
Wisconsin	24.0	113.5	4.6	.99
GREAT PLAINS				
Minnesota	75.4	129.8	4.7	1.05
Missouri	31.3	141.7	5.5	.96
Nebraska	22.6	125.1	5.9	.98
North Dakota	21.1	247.5	6.2	.71
South Dakota	52.8	179.6	3.1	.98
WEST				
Arizona	171.4	410.0	7.2	.76
California	32.4	382.1	5.5	1.91
Idaho	87.1	301.3	6.6	.62
Montana	253.0	322.0	4.7	.68
Nevada	18.7	176.0	5.3	1.33
Utah	50.0	347.3	7.5	.54
Washington	39.0	151.7	8.2	1.31
Mean	38.27	210.12	5.22	.93
Standard Deviation	53.4	96.89	1.67	.40

cent increase in the high school students enrolled for the states giving aid is 210.12 and for the states not giving aid, 212.33. The critical ratio is .10. Here again no significant difference is evident.

From another standpoint, if the relationship of the per cent that the high schools are to the total number of schools is taken into consideration another possibility of comparing the two groups of states arises, for if the high schools have been receiving the benefit of state aid, then it might logically be assumed that there would be a larger number of high schools in relation to the

TABLE 29

States Not Giving Aid to High Schools

States	Per Cent Increase in 1912–1922 High Schools	Per Cent Increase in High School Enrollment	Per Cent That High School is to Total Number of Schools	Ability to Support Education
EAST				
New Hampshire	23.1	46.1	7.1	1.20
SOUTH				
Florida	10.2	396.7	3.8	.66
Kentucky	76.5	208.9	3.3	.50
Mississippi	1.9	241.0	2.4	.33
Texas	4.0	197.8	4.5	.66
GREAT LAKES				
Illinois	16.8	129.4	5.2	1.33
Indiana	5.8	93.6	10.4	1.02
Michigan	25.8	114.2	5.6	1.20
Ohio	10.4	134.0	9.0	1.22
GREAT PLAINS				
Iowa	24.1	235.9	5.6	1.14
Kansas	48.4	140.2	6.3	.96
Oklahoma	95.4	398.1	5.5	.61
WEST				
Colorado	27.4	173.9	4.5	1.13
New Mexico	96.1	406.2	3.4	.41
Oregon	88.0	180.0	7.8	1.35
Wyoming	155.5	301.2	3.0	.86
Mean	44.10	212.3	5.46	.91
Standard Deviation	43.6	107.41	2.26	.33
Critical Ratio	.86	.10	.89	.30

total number of schools in the states giving aid than in the states not giving aid. The mean per cent for states giving aid is 5.22, and for states not giving aid it is 5.46. The critical ratio is .89. There is again no significant difference.

In the last analysis another factor which might influence the tendency to support high schools is the ability of the states to support education, for if it is found that the states giving aid are wealthier than the states not giving aid, then the fact that there are no differences in the per cent increase in high schools, the per cent increase in high school enrollment, and the per cent that the high schools are to the total number of schools, it might be assumed that those states were not fulfilling their obligations in providing high school education for their children. On the other hand, if the wealth in those states giving aid is less than in the states not giving aid, it might be possible to infer that state aid is actually effective in producing equivalent conditions in the two groups of states in regard to an increase in the number of high schools, an increase in high school enrollment, and the relation of high schools to the total number of schools. Upon testing this factor it was found that the mean ability to support education of the states giving aid is .93 and of those not giving aid it is .91. The critical ratio is .31. This represents no significant difference and accordingly suggests that neither of the two foregoing possibilities can be applied.

SUMMARY

After a comparison of the states giving aid to high schools and states which are not giving aid to high schools has been made, there appears to be no significant difference in any of the units of measure chosen. These units include the per cent increase in enrollment over the same period of time and the per cent that high schools are to the total number of schools in 1922, and the ability to support education. Thus in the array of data utilized in this study, it may be concluded that if these factors are fair units of comparison, state aid has had no greater effect as a device for use by states in the development of high schools than that which other states may have used in the development of the same purpose.

CHAPTER VII

FACTORS INFLUENCING EDUCATIONAL PROGRESS

In an attempt to discover the factors associated with progress in the development of the projects studied in this research, the writer sought by interview and correspondence to get the judgments of a body of competent educators who by virtue of their experience and knowledge were familiar with the operation of these projects in their respective states. The scope of this investigation involved not only the states which were granting special subsidy as a device for stimulating progress but also the states which were not granting aid to these projects. Within each group a selection was made of those states making comparatively the best progress in each project and also those making comparatively the poorest progress. The plan in substance was to get an expression from state superintendents of public instruction, deans of education, professors of education, county superintendents, and university presidents as to what in their judgment appeared to be the chief contributing factors in the type of progress which the statistical study of this research revealed as being made by their particular state. It was hoped that the consensus of opinion of these judges would serve in a measure to rationalize the conclusions of Part Two and to discover, perhaps, means or devices, aside from state aid, which have been effectively utilized by states in the encouragement of educational progress.

This investigation is based on expressed judgments embodied in eighty-two letters and sixteen interviews involving on an average two projects per letter and per interview. An analysis of these data shows that from authorities in both groups of states twelve factors contributed to the best progress in the project of consolidation. In each group of states, all judges were agreed that the "attitude of the people" and the "Good Roads Program" were real factors associated with progress in this field. The ambition or urge for higher education, together with an appreciation of convenient school accommodations as well as the assumed superi-

ority of the consolidated school over the small isolated schools, described the attitude of the people; while a campaign for improved state and county highway systems, due in part to requirements for mail routes, characterized the good roads program. In each group of states the power vested in county boards or trustees to reform districts, to close, to locate, and to determine type of schools, etc., was also mentioned as a contributing factor to exceptional progress in consolidation, as well as the "force of example set by other communities," wherein competitive efforts were brought about by the contrast set up in neighboring corporations.

It is interesting to note that within the group of states giving aid for consolidation there is mentioned a total of eight factors which contribute to the best progress. The means or device given the greatest stress is that of the campaign—not only by the state through the circularization of literature showing the county ratings, etc., but also by individuals lecturing on the advantages of consolidation, and by organizations, such as the parent-teacher association, actively urging its adoption. All judgments advanced centered on this specific factor while only sixty per cent mentioned special aid as a contributing factor. Eighty per cent of the judgments mentioned state requirements for higher standards and mandatory regulations, such as length of school term, compulsory education laws, etc., as having a salutary effect. Sixty per cent of the judgments cite the "larger unit idea" (with a county board of education and a county superintendent elected by this board) as also contributing to the success of consolidation within their states. Aside from the factors mentioned above, the long, continuous, and efficient service of the state department and state superintendent is likewise advanced as a contributing factor.

Within the states not giving aid to consolidation, six factors are mentioned. All judgments agree, as in the former situation, that the "campaign" and the "attitude of the people" are real factors in bringing about consolidation. Fifty per cent of the judgments mention the "example set by other progressive communities," and "the power of the county board to close or build high schools" as factors influencing the progress of this project. The effect of Smith-Hughes work in rural high schools and group athletics, especially basketball, are also mentioned.

The reasons given by the judges for the slight progress evidenced in the states not giving aid to consolidation are the following: (1) an indifference due to the lack of stimulation from the state department, (2) geographic and climatic conditions, (3) sparse population, and (4) the excessive transportation costs. All judgments agree that the factor involving geographic and climatic conditions is the chief obstacle to progress, while seventy-five per cent of the judgments cite excessive transportation costs. These costs, they contend, are due in part to seasonal changes which involve the purchase not only of automobiles but also of sleighs and sleds. It is of interest to note that in both groups of states the sparsity of population also accounts for the slight progress made.

The project of transportation apparently has eleven factors as explanatory of the best progress made within all states. In the states giving aid to transportation, ten distinct factors are advanced. Fifty per cent of the judgments agree that special aid and the attitude of the people are contributing factors, while sixty per cent of the judgments agree that the campaign (both individual and state) and the diminishing density of the rural population are also factors influencing the progress of this project. The remaining factors associated with progress are mandatory state requirements, force of example set by other communities, the power of the county board, group athletics, the effect of the Smith-Hughes work in rural high schools, and the long, continuous, and efficient service of a state superintendent of public instruction.

The states not giving aid stress the factor of mandatory state requirements as the best means for encouraging progress. The states making poor progress within this group attribute the chief obstacles to the attitude of the people, who seem satisfied to provide transportation themselves, geographic and climatic conditions, and the slight need for transportation due to the close location of high schools.

Slight progress within the states giving aid to transportation is accounted for on the basis of the state's economic strength and vigor, the reluctance on the part of the people to lose control of their small schools, the small unit system of school organization, and the geographic and climatic conditions.

Eight factors seem to explain the best progress made within all

states in the project of libraries. State aid and state requirements are given equal mention as contributing to the best progress. Special stress is placed on the effectiveness of the mandatory state requirement prescribing that at least one teacher who has had a minimum of seventy-two hours of library training shall be on every high school faculty. The campaign is given second emphasis in order of frequency of mention, particularly as it concerns instruction by means of publicity materials and the state supervision of school libraries. Besides these, other contributing factors in order of frequency of mention are the county system of school organization, the state division of libraries, the efficiency of state superintendents and departments, and the desire of the people for good books.

In the states that are not giving aid for libraries, the most frequently mentioned factor is that of state requirements as it involves the raising of standards. Other factors are: publicity campaigns, a realization of the inferiority of state-adopted books and the necessity for a good high school library in order to be accredited.

The states making poor progress within this group attribute such progress to the lack of appreciation on the part of the people for a good library, the state's economic strength and vigor, and facilities largely supplied through village and town libraries which are near schools.

Nine factors seem to explain the best progress made within all states in the project of high schools. It is significant to note that in the states giving aid to high schools seventy-five per cent of the judgments attribute the progress to the ambition on the part of the people for good high school accommodations, while only twenty-five per cent cite specifically state aid as being a contributing factor. Other factors mentioned in order of frequency of occurrence are the states' economic strength and vigor, the junior high school movement, the enriched and diversified curriculum offering, the force of example set by other communities, and the efficiency of state superintendents and state departments.

Within the group of states not giving aid to high schools, all judgments agree that state requirements for higher standards and other mandatory legislation are perhaps the most effective means of stimulating progress. Next in order is the campaign for better-

trained teachers, good roads, and publicity for the desirability of a high school education. The remaining factors are free high school tuition, the county system of school organization, the character of the population, and the attitude of the people. The states within the group that made poor progress attribute the cause largely to a lack of an efficient state organization and administration.

Factors Contributing to Marked Progress

STATES NOT GIVING AID

To recapitulate, this investigation shows that within the states not giving aid to projects the means or devices which have been most effective in encouraging progress are, in order of frequency of mention, the following: state requirements, the campaign, the attitude of the people, and the larger unit of school organization and administration. Other factors less frequently mentioned are the force of example set by other communities, the effect of Smith-Hughes work, and group athletics. The related projects of consolidation and transportation show that in order of frequency of mention the campaign and the attitude of the people stand out as the chief contributing factors to the best progress. The remaining factors receiving an equal distribution of judgments are: state requirements, force of example, the larger unit system of school organization, group athletics, and Smith-Hughes work. The related projects of high schools and high school libraries show that all judgments cite state requirements, and seventy-one per cent cite the campaign as the chief contributing factor to the best progress. The remaining factors mentioned in order of frequency of occurrence are the attitude of the people and the larger unit system of school organization and administration.

STATES GIVING AID

Within the states giving aid to projects, the factors which have been most effective in achieving the best progress are, in order of frequency of mention, the following: the campaign, state requirements, state aid, the attitude of the people, the density of rural population, and the larger unit of school organization and administration. The additional three factors receive equal stress:

force of example, the states' economic strength and vigor, and the efficiency of service rendered by state departments and state superintendents. It is significant to note that the judgments from this group of states cite the campaign and state requirements more often as contributing factors than state aid itself.

Within the related projects of consolidation and transportation, it is interesting to note that the two outstanding factors influencing progress are the same as those which are most frequently mentioned in the states that do not use special subsidy for these projects. The additional factors in order of frequency of mention are: state aid, state requirements, the larger unit of school organization and administration, the density of rural population, force of example, and the efficient service of state superintendents and state departments, together with the states' economic strength and vigor, Smith-Hughes work, and group athletics.

The related projects of high schools and high school libraries show that state requirements and state aid receive an equal division of judgments, while the remaining factors, in order of frequency of mention, are as follows: the campaign, the attitude of the people, the larger unit of school organization, the density of rural population, the states' economic strength and vigor, and special divisions of the state department. The force of example, together with efficient service of the state superintendents and state departments, is also cited as being associated with progress in this field.

GENERAL SUMMARY

The consensus of judgment indicates that the three most effective devices for encouraging progress in order of frequency of mention are state requirements as it involves higher standards and mandatory legislation, the campaign as it involves the circularization of literature, individual lectures, etc., for the development of a specific purpose, and state aid as it involves the payment for effort. Other important factors are: the attitude of the people, the manner in which the state is districted for school organization, the density of rural population, the force of example set by other communities, and the degree of efficiency exercised by state superintendents and state departments.

Factors Contributing to Slight Progress

STATES NOT GIVING AID

Recapitulating further, this investigation shows that in the states that do not give aid to projects poor progress was attributed primarily to geographic and climatic conditions, the attitude of the people, and the states' economic strength and vigor. Other factors which are cited include excessive costs, and inadequately organized state department, the density of rural population, and the inefficiency of state superintendents. Within the related projects of consolidation and transportation, the factors attributed to poor progress in the order of frequency of mention are: geographic and climatic conditions, excessive costs, the attitude of the people, an inadequately organized state department, and the density of rural population. Within the related projects of high schools and high school libraries, the attitude of the people, the states' economic strength and vigor, together with an inadequately organized state department constitute the three factors functioning as an obstacle to the best progress.

STATES GIVING AID

From the states which use special subsidy as a device there is a scarcity of judgment recorded as to what contributes to the accomplishment of slight progress. The states, however, which make comparatively the poorest progress attribute such poor progress to geographic and climatic conditions, the attitude of the people, the states' economic strength and vigor, and an inadequately organized state department.

GENERAL SUMMARY

The consensus of judgment indicates that the greatest obstacles confronting progress are, in order of frequency of mention, the following: geographic and climatic conditions, the attitude of the people, states' economic strength and vigor, excessive costs, and the indifference and inefficiency of state superintendents and state departments.

CHAPTER VIII

NEEDS REVEALED BY THE STUDY

The process of this research has brought into relief certain considerations which are pressing for investigation and solution. The more insistent ones are listed below with a view of guidance to further progress in the examination of the field of state aid as it is related specifically to educational projects in the public schools.

CONSIDERATIONS

1. Are not the possibilities for "stimulating" educational progress adequate if properly coördinated with the function of existing state, national, or special foundations, organizations, societies, or other educational agencies?
2. What are the criteria or principles for determining the nature of projects worthy of receiving special state aid?
3. When is the abandonment of a subsidy warranted?
4. To what extent have states experimented with new methods and bases of apportioning school moneys?
5. Is there any marked tendency toward paying out state appropriations as reimbursements?
6. Is the tendency to supervise the expenditure of state grants increasing or decreasing?
7. What provision is made for the supervision of expenditure of state grants?

Probably the greatest single need at the present moment is a detailed study on each project now subsidized—not only as regards the prevailing accomplishments therefrom but also as regards the sources, revenue, and forms of the funds provided therefor.

SUMMARY AND CONCLUSIONS

No summary of this research would be complete which evaded the issues raised by the argumentation set forth in the Introduc-

tion and augmented by the controversy presented in Chapter II of this study. Obviously, one who holds to the principle that it is the function of the state to encourage educational progress and advocates doing this by the payment-for-effort device will not find much comfort in the showing of the states as presented statistically in Part II. On the other hand, one who holds the opposite principle—that it is the function of the state to equalize educational opportunity—will feel that the states have already gone too far in the direction of rewards. The major concern of the writer has been to show from all data available the present status of state aid for educational projects in the public schools, and to determine as accurately as possible within the limitations of these data the accomplishment which the device of special subsidy has achieved. The one thing clearly suggesting itself from interpretation of the statistical data involved in Part II is the fact that special subsidy has had no greater effect as a device than those which may have been used by other states in accomplishing educational progress.

On the contrary, the summarized judgments in this chapter indicate by frequency of mention that propaganda and the raising of the standard of state requirements have been more effective than the utilization of special subsidy (for the encouragement of progress). These judgments also designate other important factors contributing to progress, such as the campaign, the manner in which the state is districted for school organization, and the density of rural population, which have previously been considered in the statistical treatment. In addition they disclose such factors as: the attitude of the people, the force of example set by other communities, and the degree of efficiency exercised by state departments and superintendents. Due to lack of available data, no attempt has been made to appraise these factors. From an opposite point of view, the consensus of judgment indicates that the greatest impediments to progress are, in order of frequency of mention, the following: geographic and climatic conditions, the attitude of the people, the states' economic strength and vigor, excessive costs, and the indifference and inefficiency of state departments and state superintendents.

From the aforesaid considerations, it appears that the burden of proof must rest upon those seeking a continuance of state aid for local interest. When aid as a stimulating device for use by

states in accomplishing educational progress fails to accomplish a noticeable acceleration when compared with states where no use has been made thereof, and when reliable judgments have pointed out means of equal, if not possibly more, effectiveness in accomplishing the same progress, the necessity for particular thought and scrutiny of any plan designed to "stimulate" educational improvement seems apparent; and a demand for proof of its efficacy seems imperative.

That state aid for educational projects in the public schools is in popular favor, that there will probably be a continuance of increased activity with regard to state aid, that such activity is prevailing quite apart from consideration of wealth, expenditure or educational rank, that special aid is also in favor with state legislators, and that manifestly at least one poor feature of state policies is outstanding in the observed practice of states during the period covered by this research are statements which can be substantiated by the facts embodied in this study.

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